THE IMPACT OF CHOICE PROVISION ON STUDENTS' AFFECTIVE ENGAGEMENT IN TASKS: A FLOW ANALYSIS

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ABSTRACT

THE IMPACT OF CHOICE PROVISION ON STUDENTS' AFFECTIVE ENGAGEMENT IN TASKS: A FLOW ANALYSIS

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This study was designed to investigate the impact of choice on students' affective engagement in 19 tasks in an EFL classroom. The choice provision techniques for the tasks included student-generated choice, teacher-assigned choice and no choice. The study was conducted with one group of 26 students who were taking the English 102 course offered at Middle East Technical University (METU).

Data was collected using a survey of student affective engagement completed immediately after each task. Individual student means were used to investigate the motivational potential of tasks, and the number of participants in flow and apathy for each task. Data was further analyzed using ANOVA tests for choice and interactional pattern, a MANOVA test for the impact of choice, interactional pattern, and their

mediating effect on the three flow dimensions, and *t*-tests for English proficiency and gender.

The analyses indicated that both choice and interactional pattern significantly contributed to students' affective engagement in tasks, but that interactional pattern played a more important role. Results showed that provision of choice did produce a significant positive difference in affective engagement compared to no choice, but that there was no distinction between student-generated and teacher-assigned choice. The findings also showed that an interactional pattern of group work produced significantly better results, followed by individual work, and a negative trend for whole-class interaction. A MANOVA test showed that while choice had a significant effect on task control and task appeal, interactional pattern showed a significant effect for all three flow dimensions, including focused attention. Moreover, the findings revealed a significant interaction effect between choice and interactional pattern for students' perceptions of task appeal. Lastly, it was concluded from *t*-test results that neither English proficiency, nor gender significantly related to affective engagement in tasks.

Key Words: Flow, affective engagement/affective response, task, choice, teacher-assigned choice, student-generated choice

ÖZET

ÖĞRENCİLERE SEÇENEKLER SUNMANIN AKTİVİTELERİ YAPARKEN DUYGUSAL MOTİVASYONLARINA OLAN ETKİSİ: BİR 'FLOW' TEORİSİ ANALİZİ

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Yüksek Lisans, Yabancı Dil Olarak İngilizce Öğretimi Bölümü

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Bu çalışma, bir yabancı dil olarak İngilizce dersindeki 19 aktivitede öğrencilere sunulan seçeneklerin duygusal motivasyonlarına etkisini incelemiştir. Aktivitelerde sunulan seçeneklerin bir kısmını öğretmen tayin ederken, bir kısmı öğrencilerin kendi belirledikleri seçeneklerden oluşmaktadır. Bunun dışında seçenek sunmayan aktiviteler de vardır. Bu çalışma ODTÜ'de verilen İngilizce 102 yazı dersini alan ve 26 kişiden oluşan bir sınıfla gerçekleşmiştir.

Öğrencilerin duygusal motivasyonlarını ölçmek için her aktivitenin hemen arkasından bir anket uygulanmıştır. Anketlere öğrencilerin verdiği cevaplar aktivitelerin ne derece motive edici olduğunu ve kaç kişinin duygusal motivasyonunun yüksek olduğunu belirlemek için kullanılmıştır. Seçenekler sunma ve aktivite organizasyonu için ANOVA testleri, seçenekler sunmanın, aktivite organizasyonunun ve ikisi

arasındaki etkileşimin üç ‘flow’ boyutu üzerindeki etkisi için bir MANOVA testi, ve İngilizce yeterlilikleri ve cinsiyetin etkileri için *t*-testler uygulanmıştır.

Sonuçlar hem seçenekler sunmanın hem de aktivite organizasyonunun öğrencilerin duygusal motivasyonu üzerinde istatistiksel açıdan önemli bir etkisi olduğunu, ancak aktivite organizasyonunun daha belirleyici bir rol oynadığını göstermiştir. Hiç seçenek sunmayan aktivitelere kıyasla öğrencilere seçenekler sunan aktivitelerin istatistiksel olarak daha olumlu sonuçlar verdiği, fakat seçeneklerin öğretmen tarfından tayin edilmesi ya da öğrencilerin belirlemesi arasında istatistiksel olarak bir fark olmadığı bulunmuştur. Sonuçlar aynı zamanda öğrencilerin gruplar halinde yaptıkları aktivitelerin istatistiksel açıdan daha olumlu sonuçlar verdiğini göstermiştir. Bu aktiviteleri bireysel olarak yapılan aktiviteler izlemektedir; tüm sınıfın birlikte yaptıkları aktivitelerde ise negatif bir eğilim gözlemlenmiştir. Uygulanan MANOVA testi ise seçenekler sunmanın öğrencilerin aktivite üzerindeki kontrolüne ve aktivitenin ilgi çekici olması yönündeki algılamalarına istatistiksel açıdan etkisi olduğunu gösterirken, aktivite organizasyonu odaklanmış ilgi dahil olmak üzere üç ‘flow’ boyutunda da etkili olmuştur. Ayrıca, öğrencilerin aktivitenin ilgi çekiciliği konusundaki algılarına istinaden seçenekeler sunmak ve aktivite organizasyonu arasında bir etkileşim olduğu saptanmıştır. Son olarak, uygulanan *t*-testler İngilizce yeterlilik ve cinsiyetin öğrencilerin duygusal motivasyonları üzerinde istatistiksel açıdan önemli bir etkisi olmadığını göstermiştir.

Anahtar Kelimeler: ‘Flow’, duygusal motivasyon, aktivite, seçenek, öğretmen tarafından tayin edilen seçenekler, öğrencilerin kendilerinin belirledikleri seçenekler

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CHAPTER I: INTRODUCTION

Introduction

Flow theory investigates the quality of subjective experiences during total engagement in an activity. Since these subjective experiences are characterized by feelings of interest, enjoyment and satisfaction, they are referred to as 'optimal experiences' (Csikszentmihalyi, 1975, 1990). Although flow experiences have been extensively studied in the context of sports, art and computer games (Csikszentmihalyi, 1997), the relationship between flow experience and language learning is a relatively new area of inquiry. Existing research does suggest that a flow-like experience can be captured in language classrooms, and that contextual factors such as task-related variables could contribute to the occurrence of positive emotional states in learners (Abbott, 2000; Egbert, 2003; Larson, 1988). From this perspective, the task-related variable of providing students with choices might cause changes in their affective engagement similar to an experience of flow.

The purpose of this study is to investigate whether tasks that provide students with choices in the classroom have an impact on their affective responses while they are engaged in the task. Discovering the effects of choice provision could further provide insights into learners' perceptions of different flow dimensions.

This study was conducted at Middle East Technical University (METU) with 26 freshman students enrolled in a single section of the required English 102 academic

writing course. The study attempted to measure students' affective engagement while they were participating in 19 different classroom tasks. Of these tasks, some included choice, either provided by the teacher or generated by the students, while some tasks afforded no choice.

Background of the Study

Flow theory attempts to explore the feelings of individuals when they are engaged in a task. The theory posits that intrinsically motivating experiences lead to optimal psychological states identified as 'flow' during total engagement in an activity (Csikszentmihalyi, 1975, 1988, 1990). Flow is one aspect of the affective dimension of human motivation. According to flow theory, an individual is thought to reach peak or optimal experiences when the conditions necessary for flow are embedded in the activity (Csikszentmihalyi, 1990, 1997; Egbert, 2003). The preconditions that must exist for flow experience to occur are: (a) a balance between challenge and available skills, (b) focused attention and concentration, (c) interest, and (d) a sense of control. Although these flow dimensions have been more widely explored to explain the quality of subjective experience in leisure activities and work environments (Csikszentmihalyi, 1975, 1993), flow theory has recently been extended to language education research (Abbott, 2000; Egbert, 2003; Tardy & Snyder, 2004; Wilkinson & Foster, 1997).

Within flow theory, autonomy-supportive environments, in which learners are given some freedom of choice, are more likely to create conditions for flow than controlled environments (Abbott, 2000; Egbert, 2003). The inherent need for autonomy, in effect, motivates individuals to seek and engage in new challenges, an essential component for the experience of flow. Within motivation research, the study of

autonomy has been central to self-determination theory (Deci & Ryan, 1985; Noels, Pelletier, Clément & Vallerand, 2000). The extent to which individuals' need for autonomy is satisfied also influences the motivational level of individuals. In order to study the sources of behavior that motivate individuals, self-determination theory approaches motivation by distinguishing between intrinsic and extrinsic motivation.

Intrinsic and extrinsic motivation have been widely addressed in much second language learning and motivation research. The former implies a willingness to engage in the learning experience for the sake of learning and improving oneself because of the interest and enjoyment derived from the activity (Deci & Ryan, 1985; Ryan & Deci 2000a). The source of motivation is within the individual, and satisfaction from involvement in activities stems from the pleasure derived from engaging in them. Extrinsic motivation, on the other hand, relates motivation to an external factor outside the self. The source of motivation is dependent on environmental stimuli, such as a reward or some praise, which arouse interest and willingness to engage in an activity (Ryan & Deci, 2000a; van Lier, 1996).

Although many activities in educational settings are extrinsically motivating, the form of extrinsic motivation can vary depending on the degree of autonomy that is afforded (Ryan & Deci, 2000a). When the learning environment is less controlling, it can foster the internalization and integration of the activity, even when it is done for an external reason. Internalization occurs when the activity or behavior that is initially imposed upon the individual, is gradually integrated into one's own sense of self. As a result of internalization, tasks that are not intrinsically motivated become more valuable and meaningful for people.

Satisfaction of the inherent need for autonomy is essential in order to foster internalization and intrinsic motivation (Deci & Ryan, 1985; Noels et al., 2000; van Lier, 1996). In educational settings, autonomy is defined as students' taking control and responsibility for their own learning (Benson, 2001; Little, 1991). Deci and Ryan further describe autonomy as "a prerequisite for any behavior to be intrinsically rewarding" (as cited in Dörnyei & Otto, 1998, p.58). Autonomy-supportive contexts in education (Assor, Kaplan & Roth, 2002; Dörnyei & Otto, 1998) are believed to foster greater intrinsic motivation (Ryan & Deci, 2000b) by promoting interest in learning and consequently, increased engagement in a task (Csikszentmihalyi, 1997; Egbert, 2003; Ryan & Deci, 2000a).

Learners' interest and engagement in the learning process can be enhanced by designing motivating tasks. In the educational context, flow theory has illuminated the impact of task-related situational variables on learners' affective engagement in learning tasks (Egbert, 2003; Wilkinson & Foster, 1997). As a motivational construct, flow theory may have implications for exploring enhancement of affective engagement, increasing the quality of performance and creating more positive attitudes towards the learning process. A model of flow and learning (Egbert, 2003) has revealed 'contextual variables' that are embedded in the task itself (Dörnyei, 2002, 2003; Egbert, 2003) as significant factors that could influence learners' level of motivation.

Drawing on findings from the investigation of flow in language learning environments, the significance of analyzing tasks in the study of learner motivation has been widely acknowledged (Dörnyei, 2001b, 2002; Dörnyei & Otto, 1998; Egbert, 2003; Wilkinson & Foster, 1997). Tasks are the "primary instructional variables or building

blocks of classroom learning" (Dörnyei, 2002, p. 137). While different definitions of task exist in the literature, in simple terms, a task can be described as any activity that engages learners in the learning process and that serves the purpose of improving their language abilities (Breen, 1987; Williams & Burden, 1997). The physical properties of tasks such as goals, input, activities, teacher and learner roles, and setting (Nunan, 1989) can further establish a framework for effective task design.

Physical task properties also shape the psychological aspect of tasks, which is related to the motivational potential of tasks (Csikszentmihalyi, 1997; Dörnyei, 2001b, 2002, 2003; Dörnyei & Otto, 1998; Egbert, 2003). Tasks can enhance learners' interest and increase their engagement if the activity is perceived as appealing and attractive (Dörnyei, 2001b). Interest is also closely associated with intrinsically motivated behavior and positive emotional states (Csikszentmihalyi, 1975; Deci & Ryan, 1985, Egbert, 2003). Task challenge can also lead to higher levels of motivation on the condition that learners' skills and abilities match the task challenges (Csikszentmihalyi, 1988, 1997; Dörnyei, 2001b; Egbert, 2003). Task goals further contribute to learner motivation. When an activity has clearly defined goals that are meaningful and relevant to learners' needs and interests (Assor et al., 2002), it is more likely to engage learners. Dynamic interactional patterns and cooperation among learners in the educational context can also foster affective engagement (Dörnyei, 2002; Richards & Rodgers, 1986; Tudor, 2001). When tasks provide opportunities for students to interact with each other, such as in group work activities, learners can benefit more from the activity. Moreover, such tasks can also influence the learning and motivational disposition of peers working in the same group (Dörnyei, 2001b, 2002). Lastly, giving students some control over the

activity can have positive influences on their affective engagement by catering to their inherent need for autonomy (Dörnyei, 2001b).

Tasks may accommodate learners' need for autonomy and increase task engagement if they give students a sense of choice. Choice provision as a motivational influence has gained the attention of many motivation researchers (Deci & Ryan, 1985; Dörnyei, 2003; Dörnyei & Otto, 1998; MacIntyre, 2002; Noels et al., 2000). The investigation of choice in learning environments has supported the motivational potential of choice in relation to its perceived meaningfulness and relevance (Assor et al., 2002; Flowerday & Schraw, 2000; Schiefele, 1991). Choice provision can meet students' need for autonomy given that the options are well-suited or adjusted to learners' personal goals and interests. Choices can also be interpreted as true choices when the options match learners' available skills. This idea is closely related to the fundamental skill-challenge balance in flow theory (Csikszentmihalyi, 1975, 1988, 1997) and the need for competence in self-determination theory (Deci & Ryan, 1985).

Allowing students some choice over activities may motivate them to stay engaged in the task because learners who have a sense of control through choice provision are thought to develop an increased interest in learning (Assor et al., 2002; Egbert, 2003; Schraw, Flowerday & Lehman, 2001). Choice provision can further enhance positive affective response (Meyer & Turner, 2002; Schiefele, 1991; Schraw, Flowerday, & Reisetter, 1998). Abbott's (2000) review of relevant literature showed that most subjects reported experiencing flow when they were engaged in tasks in which they were allowed choice and in activities that they were interested in. The literature reporting on the benefits of choice in increasing the quality of task performance is also

rich (Flowerday & Schraw, 2000; Meyer & Turner, 2002; Schraw et al., 2001). Thus, presenting choice to students in the tasks they are involved in could cause positive changes in students' level of motivation and enhance student affective engagement.

Statement of the Problem

A great deal of research has been conducted on the positive effects of autonomy-supportive environments (Assor et al., 2002; Dörnyei & Otto, 1998) on developing interest in learning (Schiefele, 1991; Schraw et al., 2001), and on developing the desire for challenge, and increased engagement in activities (Csikszentmihalyi, 1997; Egbert, 2003; Ryan & Deci, 2000a). Research has additionally been conducted on the contributing role of choice provision in increasing motivation in language learning contexts (Dörnyei, 2003; Dörnyei & Otto, 1998; Noels et al., 2000). As a motivational approach, flow theory has also been the focus of much theoretical and empirical research (Csikszentmihalyi, 1997; Egbert, 2003). However, little research has been conducted to investigate the differences in students' engagement in and enjoyment of tasks when the teacher gives students choices on topics and when students nominate the topics themselves. The purpose of this study is to examine whether these choice provision procedures have an impact on students' affective engagement in tasks.

Many instructors teaching the English 102 freshman writing course at METU in Turkey complain about low student motivation. The English 102 course is a compulsory course which aims at improving students' academic writing skills. The fact that students are not given much control over the tasks may be one of the reasons for low student motivation. This relationship may partially be explained by an investigation into the effects of providing students with tasks that offer them choices. Thus, interest in and

enjoyment of tasks as a result of choice could result in positive changes in students' emotional states during task engagement.

Research Questions

This study will investigate the following research questions:

1. Does choice provision affect students' overall affective engagement in tasks?
2. Is there a difference in students' perceptions of the motivational impact of tasks when choices are teacher-assigned or student-generated?
3. Does choice provision in task design have an impact on students' perceptions of different dimensions of flow?
4. Does interactional pattern affect students' affective engagement in tasks in ways parallel to choice?

Significance of the Study

In most language courses, learners are expected to engage in tasks that do not give them control over the activity. While research exists on the relationship between choice and motivation, there is little research that focuses on the differences in students' emotional states when the teacher provides them with choices and when students themselves generate their own choices. Thus, this study may contribute to the field of foreign language education by illuminating the importance of choice provision in student engagement in tasks. By having some control over the task, students may experience affective engagement while participating in a task and exhibit a more positive attitude towards language courses.

At the local level, this study can benefit the instructors at the Department of Modern Languages at METU by encouraging them to rethink their approaches to

designing and implementing tasks. It may also offer my colleagues, who are designing the language and writing course syllabi, a useful framework for shaping their criteria in choosing, evaluating and fine-tuning tasks. In this way, the study may affect the way classroom tasks are perceived by students and may have implications for changing students' attitudes towards the English 102 freshman writing course offered at my institution.

Key Terminology

Flow: Csikszentmihalyi (1988) uses the term 'flow' to describe the psychological state of people at moments of optimal experience when they are totally absorbed in what they are doing.

Affective Engagement/Affective Response: Due to the liberal definition of flow adopted in this study, the term 'flow' has been used interchangeably with affective engagement and affective response to refer to an experience similar to flow.

Task: A task can be described as any activity that engages learners in the learning process and that has the overall purpose of improving their language abilities, from simple mechanical exercises to more complex activities (Breen, 1987; Williams & Burden, 1997).

Choice: Choice refers to a reasonable array of meaningful options from which learners make a selection that best pertain to their needs, interests and skills (Williams, 1998).

Teacher-assigned Choice: Teacher-assigned choice refers to situations where the options in a task are provided by the teacher.

Student-generated Choice: Student-generated choice refers to situations where the options in a task are generated by the students themselves within a defined, broader framework.

Conclusion

In this chapter, the background of the study, statement of the problem, research questions, significance of the problem and key terminology that will recur throughout the thesis have been presented. The next chapter is the literature review which presents the relevant literature on flow theory, followed by tasks and the motivational impact of task choice in language learning contexts. The third chapter is the methodology chapter which explains the participants, instruments, data collection procedures and data analysis of the study. The fourth chapter elaborates on the data analysis by presenting the tests that were run for analyzing the data and the results of the analyses. The last chapter is the conclusions chapter which includes the discussion of the findings, pedagogical implications, limitations of the study and suggestions for future research.

CHAPTER II: LITERATURE REVIEW

Introduction

The purpose of this study is to investigate whether tasks that provide choice to learners might lead to improved emotional states during task engagement. The possible effects of choice provision in learning activities could have implications for students' affective engagement. This study may have additional implications related to the way tasks are designed and presented in language classrooms.

This chapter provides background on the literature relevant to the study beginning with an introduction to the concept of flow. This will be followed by an investigation into the relation of flow theory to self-determination theory, with elaboration on intrinsic and extrinsic types of motivation. Next, conditions necessary for flow will be discussed, followed by a review of flow theory in language learning contexts and research revealing measurement of flow. Lastly, tasks and the motivational influence of task-related choice provision will be examined.

Flow Theory

Flow theory holds that intrinsically motivating experiences result in an improved psychological state during total engagement in an activity (Csikszentmihalyi, 1975, 1988, 1990, 1997; Egbert, 2003; Tardy & Snyder, 2004). Csikszentmihalyi describes this state of mind as an experience of 'flow'. Flow is characterized by feelings of enjoyment and satisfaction, referred to as 'optimal experience', wherein individuals

become so absorbed in the activity that the distinction between the self and the activity becomes unclear (Csikszentmihalyi, 1997; Deci & Ryan, 1985). Such intense focus in the activity, in effect, may cause people to lose their self-consciousness and experience a sense of transcendence.

While experiencing flow, people are usually not concerned with the consequences of their performance. Rather, the ultimate enjoyment derived from doing the activity is the intrinsic reward which promotes the desire to stay involved in the task. Flow experiences are characterized by feelings of enjoyment, interest, happiness and satisfaction. Therefore, flow by its very nature is said to be an 'autoletic' experience wherein people engage in an activity for its own sake even when the task is perceived as difficult or dangerous. The perfect balance between the challenges afforded by the activity and the individual's available skills is believed to contribute to this optimal experiential state.

Flow theory holds that intrinsically rewarding experiences characterized by this optimal state ultimately result in increased performance. Since the activities that produce flow are intrinsically motivated, "a person in flow should be able to function at his or her best" (Larson, 1988, p. 150). In other words, the autoletic nature of flow-conducive activities enables individuals to be at the peak of their performance and productivity. Consequently, flow may possibly contribute to optimal performance and learning (Csikszentmihalyi, 1990, 1997; Egbert, 2003; Larson, 1988).

Flow has been extensively studied in relation to involvement in activities such as sports, dancing, reading, art, music, and computer games (Csikszentmihalyi, 1975, 1988, 1990). Csikszentmihalyi (1993) points out that such activities are specifically designed

to facilitate flow. However, he furthers this statement claiming that "almost every activity has the potential to produce flow" (p. 189). In fact, studies investigating flow in everyday life have revealed flow experiences being reported more frequently in work and study rather than in leisure activities provided that the necessary conditions for flow are embedded in the activity. Prior to the discussion of the necessary conditions that are conducive to flow, a broader analysis of sources of human motivation and inherent psychological needs with regard to self-determination theory would be helpful in giving deeper insight into flow and activities that might activate its occurrence.

The Relation of Flow Theory to Self-Determination Theory

Self-determination theory (Deci & Ryan, 1985, 2000; Noels, Pelletier, Clément & Vallerand, 2000; Ryan & Deci 2000a, 2000b; Vallerand, 1997) is an organismic theory of human motivation that examines the energization and direction of behaviors. The theory explores humans' inherent psychological needs as sources of self-motivation and the goals toward which people are directed for the satisfaction of these innate needs. According to self-determination theory, people become self-determined when they can satisfy the three basic psychological needs of competence, relatedness and autonomy. People differ in both their level and type of motivation depending on the extent to which these needs are catered to (Ryan & Deci, 2000a).

Self-determination theory makes a distinction between two types of motivation that initiate action in individuals: intrinsic and extrinsic motivation. Within the context of self-determination theory, Csikszentmihalyi's flow experience is described as "the archetypical intrinsically motivated experience" (Deci & Ryan, 1985, p. 155). Although intrinsically motivated behavior is central to both theories, a thorough analysis of both

intrinsic and extrinsic motivation is necessary in order to understand the complex phenomenon of human motivation, emotion and affective experiences, and their implications for learning environments.

Intrinsic Motivation

Intrinsic motivation is the willingness to engage in an activity because of the enjoyment derived from the activity itself. In this sense, it is a "non-derivative motivational force" (Deci & Ryan as cited in van Lier, 1996, p. 108), which implies engagement in the task "for its inherent satisfaction rather than for some separable consequence" (Ryan & Deci, 2000a, p. 56). Intrinsically motivated individuals are moved to act for intrinsic values such as challenge, interest or enjoyment. Their behaviors are not initiated for the attainment of external rewards (Deci & Ryan, 1985; van Lier, 1996). Such a view suggests that intrinsically motivated learners exhibit voluntary interest in learning for satisfying the innate needs for competence and autonomy (Deci & Ryan, 1985; Noels et al., 2000; Ryan & Deci, 2000a).

In order to achieve self-determination, learners seek optimal challenges, autonomy and sources of arousal in their learning environments (Csikszentmihalyi, 1975, 1988, 1990; Deci & Ryan, 1985). The need for optimal challenges implies that learners have opportunities to choose activities that are appealing to their interests and that feed their need for competence. When people have this freedom of choice, they engage in activities that they perceive as enjoyable, interesting and challenging. Interest is also central to intrinsic motivation (Deci & Ryan, 1985; Schiefele, 1991; Schraw, Flowerday & Lehman, 2001). Individuals are thought to have an inherent curiosity toward discovering things that interest them (Deci & Ryan, 1985; van Lier, 1996). Thus,

this natural inclination towards activities that arouse interest motivates individuals for further discovery and learning. When individuals' interest and intrinsic motivation are enhanced, it is believed that the learning process will become an enjoyable and rewarding experience (Csikszentmihalyi, 1997; Schiefele, 1991).

Intrinsic motivation further improves the quality of learning (Csikszentmihalyi, 1997; Deci & Ryan, 1985; Pintrich, 1989; Ryan & Deci, 2000a; van Lier, 1996). Intrinsically motivated learners approach activities as opportunities to explore new ideas. Activities that offer optimal challenges, a context of autonomy, and feelings of enjoyment and satisfaction energize learners to pursue further opportunities for learning. When learners are given the chance to engage in optimally challenging tasks, they become intrinsically motivated to seek new challenges in order to expand their available capacities (Csikszentmihalyi, 1997; Deci & Ryan, 1985). Thus, learners improve their learning and performance by continually seeking new challenges and enjoyment in the tasks they are involved in. Results obtained from a study conducted by Pintrich (1989) support the relationship between intrinsic motivation and better performance where intrinsically motivated learners outperformed those whose motivational orientation was extrinsic.

Extrinsic Motivation

In contrast to intrinsic motivation, extrinsically motivated individuals perform an action to achieve external rewards, such as grades, or to avoid punishment (Deci & Ryan, 1985). Motivation in such individuals is not aroused by the activity itself, but by factors that lie outside the activity. Many activities in educational settings are not interesting by their nature, and therefore are extrinsically motivating (Csikszentmihalyi,

1997; Deci & Ryan, 1985; van Lier, 1996). Since learners' engagement in extrinsically motivating tasks is not self-rewarding and voluntary, their interest in and enjoyment of the activity decreases (Deci & Ryan, 1985) and the learning process may be adversely affected by external factors. Lin, McKeachie and Kim (2003) in their investigation of the relationship between learners' motivation and performance in psychology classes observed that extrinsic motivation was less correlated with learner achievement than was intrinsic motivation.

Since many activities in educational contexts are not intrinsically motivating for learners, students' involvement in tasks is largely influenced by external demands. Despite being characterized as less favorable to intrinsic motivation, extrinsic motivation can also promote learning. The form of extrinsic motivation, however, may show variations in relation to how the external demands are perceived. Self-determination theory suggests that extrinsic motivation can vary depending on the extent to which the action is internalized (Deci, Eghrari, Patrick & Leone, 1994; Ryan & Deci, 2000a, 2000b); that is, freed from external influences. When behaviors are internalized, the internalized activity becomes more valuable and meaningful for learners. In effect, performance on the task varies depending on the extent to which learners internalize behaviors and exhibit autonomous extrinsic motivation.

The internalization process (Ryan & Deci, 2000a, b) is conceptualized on a continuum of extrinsic motivation. As can be seen in Figure 1, the four different forms of extrinsic motivation that lie between the two ends of the continuum are external regulation, introjected regulation, identified regulation, and integrated regulation.

Non self-determined			Self-determined
	Extrinsic Motivation		
External Regulation	Introjected Regulation	Identified Regulation	Integrated Regulation

Figure 1 – The continuum of extrinsic motivation (Adapted from: Ryan & Deci, 2000b, p. 72)

The different types of extrinsic motivation are characterized by the extent to which they promote integration. External regulation is the least internalized type of extrinsic motivation because externally regulated actions are triggered by rewards or threats. For example, a student who is studying hard to earn a scholarship is externally regulated because the action is initiated and maintained to satisfy a reward contingency – a scholarship. Introjected regulation is the stage at which the action is internalized to some extent, but is still perceived as controlling. At this stage, the behavior is internalized to avoid guilt or to experience pride. A student who memorizes his speech before giving a presentation in order to impress the teacher or to avoid embarrassment is experiencing introjection. Identified regulation is a more autonomous form of extrinsic motivation in which the individual identifies with the importance or value of the activity. For example, a learner who keeps a diary to improve his writing skills experiences identification because he believes that doing this activity will contribute to his writing performance. Although all of these stages have implications for educational settings, because integrated regulation accommodates the greatest autonomy in actions, it is of particular significance.

Integrated regulation is the most self-determined form of regulation and occurs when the activity is in congruence with the individual's values and beliefs. Learners who

experience integrated regulation have choices over engaging in activities, and they value the goals that have initially been imposed upon them. In other words, as they identify with these assigned goals, they begin to value the activity. This type of regulation is the closest to intrinsic motivation because it affords autonomy. However, it is still extrinsic because the original source of motivation the activity is done for is some external cause rather than its inherent satisfaction.

Although the relationship between intrinsic and extrinsic motivation could be interpreted as mutually reinforcing (Deci & Ryan, 1985), research maintains that success in learning is closely related to transforming external regulation into integrated regulation (Deci & Ryan, 1985; Ryan & Deci, 2000a). Emotions contribute significantly to intrinsic motivation and integrated regulation. Deci & Ryan (1985) perceive emotions as "integrally related to intrinsic motivation" (p. 34). Similarly, Csikszentmihalyi (1975) proposes that affective experiences, such as enjoyment, interest-excitement and flow during task involvement could be directly responsible for arousing intrinsically motivated behavior. Both flow theory and self-determination theory have placed an emphasis on intrinsic motivation. Drawing on these parallels, the relationship between the two theories could be further explored.

Points of Convergence and Divergence Between Flow and Self-Determination Theories

While the concepts of flow and self-determination have been conceptualized in different theoretical frameworks, there are points at which the two theories intersect or complement each other (Deci & Ryan, 2000; Kowal & Fortier, 1999). The need for competence in self-determination theory is closely related to the optimal challenge phenomenon in flow theory. The two theories, however, show inconsistencies in their

depiction of autonomy. While both view a sense of control as being essential for increased satisfaction and greater intrinsic motivation, flow theory is more concerned with the impact of optimal challenge than the impact of autonomy on affective experiences.

Flow theory holds that people will experience flow when a person's skills are in balance with the challenges offered by the activity. Intrinsically motivated behavior, then, necessitates optimal challenge (Csikszentmihalyi, 1975, 1988; Deci & Ryan, 2000). Optimal challenge is closely related to the need for competence in self-determination theory. Competence is the inherent need to succeed in achieving a goal given that the individual has the capability and available skills (Deci & Ryan, 2000; Ryan & Deci, 2000a). Learners are believed to be motivated to perform actions when they perceive themselves capable (Deci & Ryan, 1985).

Deci and Ryan (1985) claim that the feeling of competence as a result of 'effective functioning' can be sustained only if learners face new challenges to extend their capacities. Studies revealed that when learners were given freedom to choose activities, they favored activities that were slightly beyond their existing levels of competence (Danner & Lonky as cited in Deci & Ryan, 1985). The challenges offered to students, however, should be in 'optimal balance' with learners' available skills (Csikszentmihalyi, 1997) in order to promote intrinsic motivation. If the challenges are too much above or too much below students' competence, the activity may lead to undesired outcomes such as anxiety or boredom.

Although flow theory is to a large extent consistent with self-determination theory, it has been criticized for "basing intrinsic motivation only in optimal challenge"

(Deci & Ryan, 2000, p. 261), which is more pertinent to the concept of competence. Self-determination theory maintains that experiences of both competence and autonomy are essential for intrinsically motivated behavior. Deci and Ryan (2000) point out that flow theory does not include an express concept of autonomy and contend that unless individuals perceive themselves as autonomous, optimal challenge alone cannot support intrinsic motivation.

Autonomy can be defined as having control of one's own behavior (Deci & Ryan, 1985). Since autonomous individuals perceive themselves as controllers of their behaviors (Ryan & Deci, 2000a), they are not dependent on external rewards for performing an action. Autonomy can also be enhanced if the individual feels free from excessive control and pressure (Assor, Kaplan & Roth, 2002; Deci & Ryan, 1985; Ryan & Deci, 2000a, b). It is hypothesized that learners' need for autonomy could be met by giving them more control through choices (Deci & Ryan, 1985; Noels et al., 2000; Ryan & Deci, 2000a, b). Thus, autonomy via choices may lead to higher levels of intrinsic motivation.

Despite the claim that concepts such as autonomy "have been only in the peripheral vision of flow theory" (Deci & Ryan, 2000, p. 261), it is important to note that autonomy is not neglected in flow studies, but rather underemphasized when compared to optimal challenge. Csikszentmihalyi (1975, 1990), in his discussion of the conditions for flow, addresses the idea of autonomy by referring to it as 'a sense of control'. Furthermore, studies of flow in learning environments have acknowledged the importance of autonomy in helping make flow experiences possible (Abbott, 2000; Egbert, 2003; Larson, 1988; Tardy & Snyder, 2004). Thus, a closer look at conditions

that are associated with flow could establish a clearer framework for exploring flow in educational settings.

Conditions of Flow

Flow theory holds that some preconditions must exist for flow experience to occur: (1) a balance between challenge and available skills, (2) focused attention and concentration, (3) learner interest, and (4) a sense of control (Csikszentmihalyi, 1997; Egbert, 2003). Other correlates of flow might include "clear task goals", immediate feedback on the task, "a deep sense of enjoyment", "a lack of self-consciousness", and "the perception that time passes more quickly" (Egbert, 2003). However, Jackson and Marsh (as cited in Egbert, 2003) claim that the last two correlates are not universal prerequisites for flow. In accordance with the focus of this study, the conditions associated with flow will only include an elaboration on challenge and skills, attention, interest, and control.

The balance between challenge and skills is cited as one of the most important conditions among the factors that contribute to the emergence of flow (Csikszentmihalyi, 1975, 1988, 1990, 1997; Deci & Ryan, 1985; Dörnyei & Otto, 1998; Egbert, 2003, Tardy & Snyder, 2004; van Lier, 1996; Wilkinson & Foster, 1997). Enjoyment from the task is ultimately experienced if learners feel their available skills and the challenges offered by the task are in optimal balance. This balance, in turn, leads to improved performance on the task and the learner feels motivated to face new challenges (Csikszentmihalyi, 1988, 1997; Egbert, 2003). This view suggests that optimal balance is not static, and therefore, flow can be sustained only if the level of challenge is continually adjusted to match learners' increasing skills (Csikszentmihalyi,

1997; Egbert, 2003). If the task presents challenges to learners that are too much above or below their intellectual capacity, flow is replaced by feelings of boredom or anxiety.

Focused attention and concentration on the task are also essential for the emergence of flow (Csikszentmihalyi, 1997; Egbert, 2003). Many second language acquisition studies have emphasized the important role of attention in learning (Crookes & Schmidt as cited in van Lier,1996; Schmidt as cited in Egbert, 2003; Scovel, 2001; Skehan, 1998). In relation to flow theory, Csikszentmihalyi (1990) also views attention as a "distinctive feature of optimal experience" wherein an individual's attention is so absorbed by the task that "the activity becomes spontaneous, almost automatic" (p. 53). Thus, such full concentration in the task is followed by flow, with the activity becoming an intrinsic reward in itself. While much research has emphasized conscious attention to language, many subjects who have reported experiencing flow maintained that "unintentionally focused attention" was essential for the occurrence of flow (Deci & Ryan, 1985; Egbert, 2003).

Because flow theory is concerned with the affective dimension of motivational changes, learner interest as an emotionally arousing factor has received attention in flow research. Schneider, Csikszentmihalyi and Knauth's claim (as cited in Dörnyei & Otto, 1998) that there exists a negative correlation between academic environments and motivation has been supported by students' identification of most academic tasks as being boring and uninteresting. However, it has been revealed that topics that were of interest to learners were positively correlated with engagement, enjoyment, and focused attention (Abbott, 2000; Schiefele, 1991; Schraw et al., 2001). These findings further support self-determination theory, wherein involvement in activities that interest

individuals is believed to direct intrinsically motivating behavior (Deci & Ryan, 1985). Interest that leads to flow could result from tasks that are meaningful to learners, that are authentic and that offer them choices over the activity (Egbert, 2003).

The fourth precondition for flow is the need for individual control. It has been pointed out that autonomy-supportive environments in which learners enjoy some degree of freedom (Benson, 2001; Deci & Ryan, 1985; Little, 1991; Noels et al., 2000; Pelletier, Séguin-Lévesque & Legault, 2002; Ryan & Deci, 2000b; van Lier, 1996) are more likely to create conditions for flow than controlling environments (Abbott, 2000). The intrinsic need for control does not imply control over the environment, but rather the need to have a choice and consequently be self-determining (Deci & Ryan, 1985). The inherent need for self-determination, in effect, motivates individuals to seek and engage in new challenges, which is thought to be essential for occurrence of flow (Egbert, 2003).

Flow in Language Learning

The primary focus of flow studies has been to explore the quality of subjective experience that causes behavior to be intrinsically motivating. Research conducted concerning the existence of flow experiences in educational settings in relation to the conditions associated with flow have illuminated learners' emotional states while being engaged in language learning tasks. Moreover, these studies have supported the existence of a systematic relationship between emotional states and cognitive functioning (Larson, 1988; MacIntyre, 2002). Despite being limited, the investigation of flow theory in language-oriented classrooms have shed light on the significance of

autonomy-promoting contexts, motivating tasks and teacher roles in inspiring flow in learners.

Larson (1988), in his study exploring high school students' subjective experiences while they were working on a research paper for an English class, observed that disorder in emotional states such as overarousal (anxiety) or underarousal (boredom) could adversely affect the motivation, cognitive processing and attention of students, and the quality of their work. Conversely, optimal arousal, defined as an experience of enjoyment or flow, has the potential to enhance increased cognition, clear attention and "command over one's thoughts". The relationship between optimal arousal and writing performance was also supported with his conclusion that "enjoyment as both cause and effect contributes to creating and sustaining flow in writing, [and] that the conditions that create enjoyment and that create good writing are closely related" (p. 170). While enjoyment per se is not dependent on high quality performance, the optimal conditions that could facilitate the experience of enjoyment can yield valuable insights into establishing desirable classroom environments.

A recurring issue emphasized in research studies exploring flow in language learning settings is the autonomy afforded to learners. In autonomy-supportive contexts, learners are observed to function with increased intrinsic motivation and greater task engagement that are likely to be accompanied by feelings of interest, enjoyment, satisfaction and pleasure (Abbott, 2000; Larson, 1988; Tardy & Snyder, 2004). Furthermore, flow is believed to enhance "optimal experiences", whereby learners "push themselves to higher levels of performance" (Csikszentmihalyi, 1990, p. 74) given that the learning environment is autonomy-supporting. Drawing on Csikszentmihalyi's

concept of flow and the conditions associated with its occurrence, it could be concluded that learning environments in which autonomy grants learners choice and control over tasks (Abbott, 2000; Larson, 1988) seem more likely to create flow experiences.

Designing tasks that support the conditions for optimal arousal can also enhance flow-supportive learning environments (Egbert, 2003). Tasks in which learners perceive their abilities are sufficient to cope with the task demands, which are personally interesting or engaging, which allow students to feel in command of their thoughts and actions, which have clear goals and which are followed by explicit or self-generated feedback are likely to enhance positive emotional experiences. Such tasks also have the potential to sustain students' concentration on the task, increase their level of engagement, and consequently, help learners perform better.

Content-based tasks, for example, may contribute to the development of intrinsic motivation to learn (Egbert, 2003; Grabe & Stoller, 1997; Tardy & Snyder, 2004). Grabe and Stoller (1997) suggest content-based activities that "generate interest in content information through stimulating material resources and instruction" (p. 12) can lead to flow in language classrooms. Content-based activities can also enhance greater intrinsic motivation by exposing students to "contextualized language experiences within content learning" (Tardy & Snyder, 2004, p. 121), by allowing students to personalize the content information and communicate for real purposes, and by providing students " a fair amount of choice in thematic content" (p. 121).

Besides creating learning environments and designing language tasks that might facilitate flow, the role of the teacher is also important to the discussion of flow in language classrooms. Teachers themselves can be influential in promoting learner

motivation by exhibiting interest and involvement in their work, thereby providing a model for students (Csikszentmihalyi, 1997; Tardy & Snyder, 2004). Csikszentmihalyi (1997) claims that teachers' motivation and interest in the subject matter can help shape their classroom practices, engage their learners' interest, and eventually lead to effective teaching. A study conducted by Tardy and Snyder (2004) on flow experiences of ten EFL teachers and the implications of their experiences for teacher education programs revealed that most teachers experienced flow in times when they were involved and interested in what they were doing. Thus, teacher motivation and learner motivation are closely related and if the teacher is engaged in flow, it is more likely that the learners will be, too.

Discussions of flow in learning environments suggest that flow does exist in language classrooms (Abbott, 2000; Egbert, 2003; Larson, 1988; Tardy & Snyder, 2004; Wilkinson & Foster, 1997) and that teachers can contribute to the occurrence of flow states in learners by creating environments and designing tasks that might stimulate such an 'optimal experience'. The central role of language tasks in engaging learners' interest and motivation can further reveal insights into the quality of subjective experiences in language classrooms. Prerequisite to the discussion of tasks and their flow-enhancing role, an overview of the research conducted on flow could give a better understanding of how flow is conceptualized and which methods are most suitable for measuring flow experiences.

Measurement of Flow

Empirical research on flow is a demanding task considering the complex nature of the phenomenon (Massimini & Carli, 1988). The fact that flow is a 'subjective

experience' makes it difficult to measure the affective responses to activities that are conducive to flow. Most of the research attempting to analyze flow has focused on the fundamental principle of the theory, which is the optimal balance between challenge and skills. This balance has been conceptualized by researchers in different theoretical models that explain affective experiences in relation to individuals' available skills and the extent to which the challenges offered in the activity match these skills. The pioneering work of flow in daily experience was conducted by Csikszentmihalyi (1975, 1988), whose flow model was later fine-tuned by Massimini and Carli (1988). In recent years, the conceptual models developed by these researchers have been applied to language learning environments in empirical studies conducted by Wilkinson and Foster (1997) and Egbert (2003) with a special focus on language learning tasks.

Much theoretical background to studies on flow is introduced by Csikszentmihalyi (1975, 1988, 1990, 1997) who advanced the original flow model. This model "is based on the ratio of the quantity of subjectively experienced challenges to the quantity of subjectively felt skills" (Csikszentmihalyi & Csikszentmihalyi, 1988, p. 252). According to this model, when the offered challenges are far beyond an individual's capabilities, the subjective experience will be that of anxiety. When skills are greater than opportunities for using them, then people experience boredom. Thus, optimal experience, which is represented by the diagonal channel in Figure 2, can only be predicted when opportunities and skills are in perfect balance.

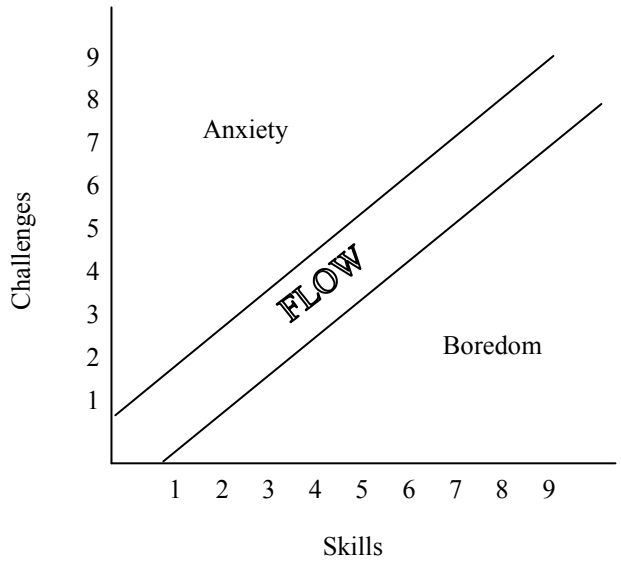

Figure 2 – The original flow model (Adapted from: Csikszentmihalyi & Csikszentmihalyi, 1988, p. 259)

The Flow Model was used in many studies measuring optimal experiences in daily life (Csikszentmihalyi, 1975). Early studies were largely based on data collected from interviews or questionnaires that measured flow. Although such methods are valuable for research into subjective experiences such as flow, they are limited by relying on self-reports that may have the risk of being inaccurate or incomplete (Csikszentmihalyi & Csikszentmihalyi, 1988). Therefore, the need arose for a more comprehensive tool that could measure flow more spontaneously, thus more accurately. It was in the mid 1970s that a new instrument, the Experience Sampling Method (ESM) (Csikszentmihalyi & Csikszentmihalyi, 1988) was first used in flow studies. The ESM consisted of electronic pagers and a questionnaire booklet distributed to respondents. Respondents were sent signals to their pagers at random times of the day and they were asked to fill out a form and answer questions in their booklets whenever they received a signal. In this way, participants recorded descriptions of their emotional states instantaneously and the investigators were able to collect more systematic data.

The Experience Sampling Form that was part of the ESM (Csikszentmihalyi & Csikszentmihalyi, 1988) consisted of some numerical scales to identify various emotions felt at the particular time the pager was signaled as well as scales that indicated the perceived challenge of the activity and the perceived skills in performing that activity. There were two items measuring challenges and skills that were scaled zero to 9 in the questionnaire. According to the flow model in Figure 2, flow experience would occur on the condition that respondents gave the same numerical value to these two items; for example, when both items were scored zero, or 6, or 9. Accordingly, it was hypothesized that there would be a correlation between individuals' emotional states during task engagement and the balance between challenges and skills. However, this theoretical assumption was not justified by the results obtained from numerous ESM analyses (Csikszentmihalyi & Csikszentmihalyi, 1988). Contrary to the predictions that the investigators made, a balance between challenges and skills hardly correlated with positive emotional states. The researchers were also puzzled by the unexpected results and for some years they tried adapting the ESM and broadening their samples in hopes to discover what the problem was.

In subsequent years, Massimini and Carli (1988) elaborated on Csikszentmihalyi's original flow model and proposed an explanation for the unpredicted results in ESM studies. Massimini and Carli (1988) held that "flow experience begins only when challenges and skills *are above a certain level*, and are in balance" (Csikszentmihalyi & Csikszentmihalyi, 1988, p. 260). Previous ESM work had assumed a person to be in flow in every instance the challenge-skill balance was maintained, even when the two items were scored zero. However, the new hypothesis was that flow could

not occur when either the challenges or the skills were below a standard level regardless of their perfect balance. Thus, this presumption complemented the original flow theory by using the personal mean for challenges and skills as the starting point for positive experience to occur. This elaboration on the previous model predicted that only high-skill, high-challenge combinations would result in flow, while a balance between the two variables below the mean would lead to apathy. The various ratios between individuals' standardized challenge and skill scores in Massimini and Carli's (1988) eight-channel flow model are pictured in Figure 3.

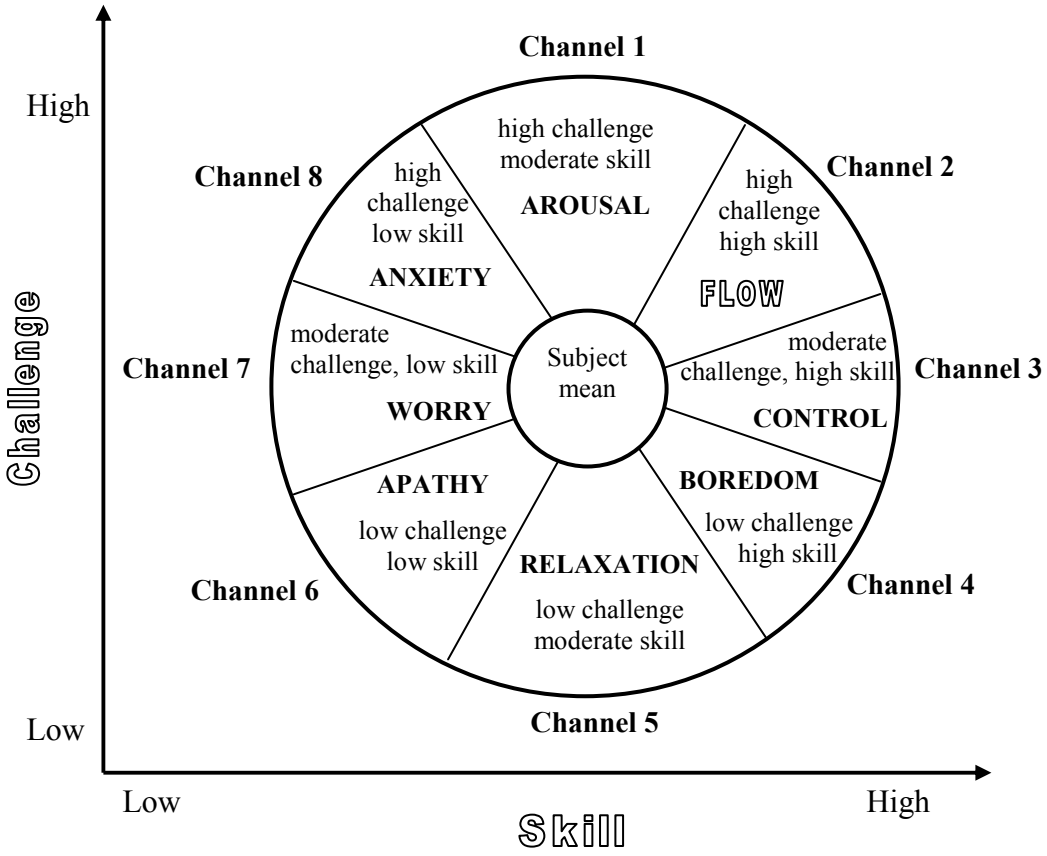

Figure 3 – Massimini and Carli's model for the analysis of optimal experience (From: F. Massimini & M. Carli, 'The systematic assessment of flow in daily experience', Figure 16.1, in Csikszentmihalyi & Csikszentmihalyi (Eds.), 1988, p. 270)

According to Massimini and Carli's model, channel 2 is the most positive among the eight channels and is characterized by flow experience. This new model was operationalized in a number of ESM studies in later years. A study conducted with Milanese teenagers, for example, met the theoretical expectations that "when challenges and skills were both high, respondents were concentrating significantly more than usual, they felt in control, happy, strong, active, involved, creative, free, excited, open, clear, satisfied, and wishing to be doing the activity at hand" (Massimini & Carli, 1988, p. 271). Subsequently, a study comparing the quality of experience in the flow channel between Italian and American students also revealed similar results concerning the challenge-skill balance although there were differences in subjects' responses to flow due to cultural factors (Carli, Delle Fave & Massimini, 1988). Findings from a flow study on adults, wherein they reported the highest quality experience when both challenges and skills were high, further confirmed the validity of the model (LeFevre, 1988).

A recent study that has investigated flow in the learning environment was conducted by Wilkinson and Foster (1997). Different from previous flow studies that intended to explore the moments when individuals were in optimal psychological states, Wilkinson and Foster (1997) were more interested in the application of the flow model to "tasks and their possible learning enhancing effect" (p.2). In their attempt to investigate the motivational potential of language tasks, the researchers designed a short questionnaire containing items and semantic differentials similar to those in Csikszentmihalyi's Experience Sampling Form and also used by Massimini and Carli in their 1988 study. The questionnaire was revised after a pilot study and administered as a

pre and post-task questionnaire in their second, more comprehensive research study. The purpose of giving this questionnaire was to see if there were variations in students' perception of the task before and after it was implemented.

Following Massimini and Carli's (1988) circular flow chart, they calculated the average mean scores on success and satisfaction to explore whether students were motivated by the task. The motivating effect of tasks was determined by averaged scores of 2.5 for unmotivating and 5.5 for motivating tasks. Based on these averaged scores, the researchers were able to identify students who hit the flow channel. Whereas students' mood measures revealed a correlation between perceptions of high challenge, they showed different correlations for skills. Despite differences in the patterns of relationship between challenges and skills, the results of this study were largely complementary with the Massimini and Carli (1988) study. The findings further supported the adequacy of a short questionnaire with few items in obtaining information about task effectiveness.

Flow theory has additionally been investigated in foreign language classrooms by Egbert (2003), who has approached the theory from a broader perspective. Rather than only focusing on the balance between challenges and skills, as most previous studies had done, she analyzed flow experience in relation to the four basic conditions that induced its occurrence: a balance between challenge and skills, focused attention, interest and a sense of control. Grounding her investigation on theoretical background to flow, Egbert (2003) conceptualizes her own model on the relationship between flow and learning. This hypothetical model, as shown in Figure 4, depicts the interplay of contextual factors, such as tasks, and learner characteristics as influential on the

occurrence of flow states in individuals. The resulting enhanced emotional state, in effect, keeps the learner immersed in the task, and consequently, leads to improvements in the learners' skills.

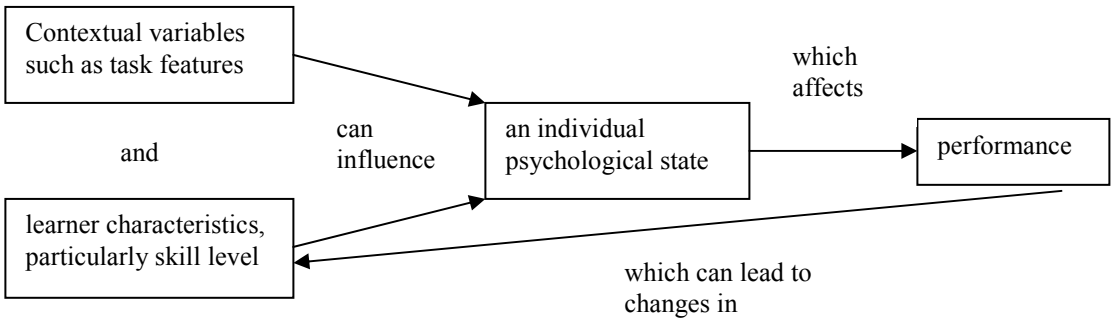

Figure 4 – Simplified model of flow and learning (From: Egbert, 2003, p. 500)

A refinement of Egbert's first model presents a more precise description of environmental variables: language learning tasks. Egbert (2003) hypothesized that tasks would support flow if learners identified them as being moderately challenging and interesting. If the task and environment also granted a sense of control and provided opportunities for focused attention and immediate feedback flow would be supported. Based on this model, Egbert's study centers on tasks, particularly the kinds of tasks that might possibly lead to flow in language learning settings.

In her study, Egbert investigated the kinds of tasks that produced a more positive affective response, using both quantitative and observational sources of data. First, she collected background information about participants' personal and educational backgrounds. Next, a perceptions questionnaire adapted from Webster, Trevino, and Ryan (as cited in Egbert, 2003) was administered. The questionnaire included 14 items in Likert-scale format which reflected her four-faceted framework of flow including challenge, attention, interest, and control. Observations during learners' involvement in tasks and follow-up interviews including stimulated recalls compensated for the

subjectivity of the questionnaire. Samples of participants' products were also collected for a more thorough examination of task processes.

The data analysis procedure included the calculation of the number of participants experiencing flow for each individual task as well as classroom observations of flow during engagement in each task. In determining flow experience, Egbert (2003) also acknowledged Massimini and Carli's (1988) contention that flow occurs when skills and challenge are above average. Thus, the survey results were analyzed in relation to the means for each task over all students. The results of the study were discussed according to each of the four flow dimensions, but the findings overall indicate the possibility of capturing flow in language settings by manipulating tasks. Although the results are not sufficiently illuminative of specific task characteristics that support flow, the implication of this study is that flow experience in learners could be triggered by developing flow-conducive tasks. The findings also validated the measurements used in the study and confirmed the reliability of using surveys in measuring flow.

Overall, the different models that have attempted to conceptualize a complex phenomenon like flow are all helpful in interpreting the quality of emotional experience in individuals. While some studies have focused more on the assessment of flow in daily experience (Csikszentmihalyi, 1975, 1990; Massimini & Carli, 1988), investigations into flow in language learning environments (Wilkinson & Foster, 1997; Egbert, 2003) have provided new avenues for research in the EFL field. Moreover, the analyses of the methodologies in the studies discussed in this section demonstrate the use of surveys as reliable data-collecting tools for exploring subjective experiences such as flow. In light

of these theoretical models and studies, further research could be directed toward an investigation of tasks and specific task features that support conditions for flow.

Tasks

Attempts to define the word 'task' have resulted in various interpretations of the term in the literature. Williams and Burden (1997), in general terms, define tasks as "any activity that learners engage in to further the process of learning a language" (p. 168). Nunan (1989) elaborates on this definition by describing a language learning task as "classroom work which involves learners in comprehending, manipulating, producing or interacting in the target language while their attention is principally focused on meaning rather than form" (p. 9). Especially in task-based language teaching, tasks function as "the core unit of planning and instruction in language teaching" (Richards & Rodgers, 1986, p. 223). While completing tasks, language learners use language as a means to an end, that is, to engage in real and meaningful communication where there is a specified and clear goal.

While there seems to be a general agreement on the communicative, meaning-focused and goal-oriented nature of tasks (Bygate, Skehan & Swain, 2001; Littlewood, 2004; Nunan, 1989; Swales, 1990; Ur, 1996; Willis, 1998), there remains an inconsistency as to what essentially constitutes a task. Ellis (2003) draws on both the research and pedagogic literatures to explain how some researchers make a distinction between a task and an activity or exercise by relating this distinction to the scope of a task. For the purpose of this study, however, tasks will be conceptualized and discussed drawing on Breen's (1987) broader definition that incorporates any kind of language activity having "the overall purpose of facilitating language learning – from simple and

brief exercise type to more complex and lengthy activities such as group problem-solving simulations and decision-making" (p. 23). Egbert (2003) too, in her investigation of flow in language learning refers to a task as a "stand-alone endeavor" (p. 501), in which the information and the action needed to achieve the specified goal is self-contained in the task regardless of its scope.

Tasks in language learning serve as useful tools for engaging learners in the learning process. Besides giving students opportunities to manipulate and practice the language, if designed and implemented effectively, tasks can also enhance learner motivation (Csikszentmihalyi, 1997; Dörnyei, 1994, 2002, 2003; Egbert, 2003). Therefore, in discussing tasks and their motivational potential in language learning, it is necessary to thoroughly investigate the specific features of tasks based on their physical properties and psychological aspects.

Physical Properties of Tasks

Irrespective of the way a task is defined and how it is manipulated in different approaches, a task will manifest certain design features. The features that should be considered in designing and implementing any task are referred to as the physical properties of a task. In the discussion of physical properties of tasks, components of a task are analyzed based on the framework introduced by Nunan (1989). As illustrated in Figure 5 below, Nunan (1989) describes learning tasks as having three major components: goals, input and activities, which in turn imply the constellation of other elements, such as roles and settings.

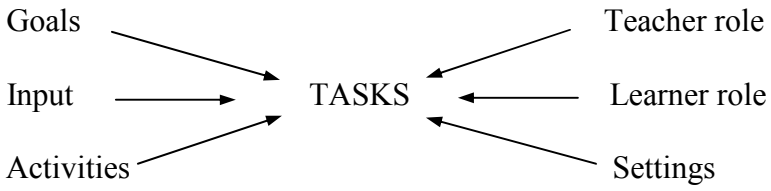

Figure 5 – A framework for analyzing communicative tasks (From: Nunan, 1989, p. 48)

Although Nunan (1989) makes a distinction between six elements in his framework, in this study, input and its interaction with goals and activities, teacher roles, learner roles and settings will inform the discussion in this section on tasks.

Input, as defined by Nunan (1989), refers to "the data that form the point of departure for the task" (p. 53). It is the information provided by the instructional material, which learners are required to process and use to reach a goal (Ellis, 2000; 2003). Input data provided by a task can include a wide range of data sources whether verbal such as a written text, or non-verbal such as a picture or a map. Depending on the instructional system within which it is presented, input can be manipulated for the various purposes of exchanging information, negotiating meaning and communicating, introducing a grammatical form, or presenting and practicing content (Richards & Rodgers, 1986). Regardless of its design and purpose, what is important to consider when presenting input is that it should be adjusted to learners' level of proficiency (Krashen as cited in Ellis, 2003). Input can also engage learners in the learning process more readily if it is authentic, challenging to a reasonable degree, interesting and relevant to learners' needs (Dörnyei, 2001b; Lee, 2000; Tudor, 2001).

Teacher roles refer to the part teachers are expected to play in presenting language tasks and their interactional relationship with the learners during task

engagement. Richards and Rodgers (1986) point out that teacher roles are related to the following issues:

> (a) the type of functions teachers are expected to fulfill, whether that of practice director, counselor, or model, for example; (b) the degree of control the teacher has over how learning takes place; (c) the degree to which the teacher is responsible for determining the content of what is taught; and (d) the interactional patterns that develop between teachers and learners (p. 28).

Within a more learner-centered approach to teaching, for example, teachers can act as facilitators of communication between learners, as organizers of resources, materials and input, as active participants and learners, as mediators, and as guides to monitor learners' task processes (Lee, 2000; Tudor, 2001). Furthermore, the teacher could establish ways to direct and guide the interaction between learners and maintain participation during task completion as well as give students more responsibility in learning. While the roles of teachers have been specified in different teaching methods, in a broader sense teacher roles should be compatible with students' perceptions of the teacher in the language classroom (Kumaravadivelu, 1991; Rasekh & Valizadeh, 2004) and match the roles learners are expected to undertake.

The roles adopted by the teacher also inform learner roles. Learner roles are concerned with learners' contributions to the learning process. Richards and Rodgers (1986) elaborate on learner roles in terms of the type of activities learners are expected to complete, the degree of control they have over instructional materials and the way in which materials are manipulated, the interactional patterns that are required to fulfill task goals, the degree to which learners influence the learning of their peers, and lastly, the way learners perceive themselves in the learning process. Learners' roles can range from processor, collaborator, performer, negotiator, initiator, controller, and problem-solver to

passive recipient. Especially in recent learner-centered approaches, learners are encouraged to take more responsibility for their learning to develop their autonomous learning skills. Learners are encouraged to be more actively involved in the decision-making process and are given more opportunities to interact and collaborate with their peers while experimenting with tasks (Tudor, 2001).

Setting, the last component in considering tasks, includes the interactional dynamics of a classroom and "the arrangements specified or implied in the task" (Nunan, 1989, p. 91). Learners can be required to operate on a task using an interactional style of group arrangement, pair work, individual study, or whole-class participation, depending on the nature of the task or teacher and learner preferences. Research reveals that whole-class instructional methods are more prevalent in public school teaching, followed by a preference for individual work (Richards & Lockhart, 1996). While each interactional pattern may inform learners in different ways, the use of group work activities can increase students' involvement in tasks by providing them with opportunities to interact with each other. However, it should be noted that all interactional types, whether individual, pair, group or whole-class are important and contribute in different ways to the teaching and learning process.

The dimensions of input, teacher and learner roles, and setting as depicted in Nunan's (1989) framework provide insights into the basic design features of tasks and inform the way tasks are presented in language classrooms. In relation to the physical properties that specify tasks, certain features of tasks can also enhance learners' motivation, which is relevant to the discussion of the psychological aspects of tasks.

Psychological Aspects of Tasks

Psychological aspects of tasks refer to the motivational properties of tasks. The significance of tasks in motivating students has been addressed in much motivation research (Csikszentmihalyi, 1997; Dörnyei, 1994, 2001a, 2001b, 2002, 2003; Dörnyei & Otto, 1998; Egbert, 2003). Dörnyei (2001a, 2002, 2003) claims that students' engagement in and performance on tasks can be greatly influenced by situation-specific variables that are task-dependent and by the way the task is presented. The physical task components discussed in the previous section in relation to Nunan's (1989) framework for analyzing communicative tasks are also embedded in the psychological properties of tasks. Therefore, the motivational features of tasks in this section will elaborate on task appeal, task challenge, task goals, task interactiveness, and task control, drawing on parallels with Nunan's framework.

Task appeal implies the degree to which the attractiveness of an instructional task has the potential to enhance learners' interest and sustain their persistence in completing the task. Tasks can be perceived as attractive if the content of instructional input (Nunan, 1989) is interesting, enjoyable and varied. If the topic of the activity stimulates curiosity, triggers learners' imagination and includes an element of novelty or unexpectedness, learners are more likely to be engaged in the task (Dörnyei, 2001b). Similarly, tasks can capture learners' interest if variety is introduced in the activities. Dörnyei (2001b) cites different aspects of tasks that can be varied to stimulate learners such as the following: the language skills activated by the task (e.g. writing, speaking); the channel of communication (e.g. using visual aids to support linguistic input); and task interactiveness (e.g. individual or group work). Besides variety in tasks, the way

tasks are presented and the extent of student involvement in executing tasks can further generate learner motivation (Dörnyei, 2001a, b).

Task appeal, triggered by affective arousal variables such as variety and interest, is closely associated with intrinsically motivated behavior (Deci & Ryan, 1985). Learners who are intrinsically motivated will stay involved in a task that is perceived as attractive because of the pleasurable sensation it evokes (Csikszentmihalyi, 1975; Egbert, 2003). Moreover, if the task is interesting, it engages learners' full concentration. This total absorption in the activity results from true enjoyment that is inherent in the task and the desire to prolong this rewarding emotional experience motivates learners to extend their abilities through engagement in equally enjoyable tasks.

Task challenge as another situation-specific variable can also influence the motivational orientation of learners. Challenge can be contingent on the level of instructional input or the type of language activity (Nunan, 1989). For example, language input processed while reading a poem can be a challenging task for learners. Tasks that require learners to engage in activities such as problem-solving, discovering something, or solving a puzzle can also be perceived as challenging (Dörnyei, 2001b). However, the challenges offered by the activity can be a motivating factor only if the level of task challenge is appropriate to students' level of competence. Csikszentmihalyi (1988, 1997) in his flow theory refers to this balance between task difficulty and learner skills as 'optimal challenge'.

If the task is not challenging enough or if it offers challenge that is far beyond learners' current abilities to cope with it, learners are likely to give up. However, when tasks offer challenge to a reasonable degree, they can lead to a sense of achievement and

the feeling of competence (Candlin as cited in Bygate, Skehan & Swain, 2001; Deci & Ryan, 1985), which can eventually lead to higher levels of performance (Csikszentmihalyi, 1997). Success in achieving a task urges learners to seek activities that are more challenging. If the challenge of the task does not increase in tandem with learners' increasing skills, however, learners are likely to experience boredom. This highlights the importance of the role of the teacher (Nunan, 1989). In order to turn learning into a rewarding and enjoyable experience, teachers should realize the need for adapting the level of challenge in tasks and provide new challenges when old ones have been accomplished (Csikszentmihalyi, 1997).

The third psychological aspect of instructional tasks concerns task goals. Goals are related to the general and specific outcomes of a task (Nunan, 1989). The goal of a specific writing activity, for example, may include developing students' skills in discourse organization. Task goals are also a key factor affecting "motivation to choose, act or persevere in an activity" (McClelland & Atkinson as cited in Lin et al., 2003, p. 252). When learners are aware of task goals, it is more likely that their attention will be focused on goal-directed behavior, and they will exert more effort and energy in an activity that has well-defined goals (Dörnyei, 2001b; Woolfolk, 1993). However, tasks that have clear and well-defined goals are more motivating when the task goals are perceived as relevant and meaningful for learners (Assor et al., 2002). In other words, individuals' engagement in activities can increase if the goal is important and valuable for them, and if it is relevant to their immediate or future needs.

Teachers can set or help learners set relevant learning goals by designing and presenting tasks that enhance contextualized language experiences and by relating the

learning materials to students' personal values and goals (Dörnyei, 2001b). By allowing students to personalize the task content and by setting goals that cater to students' needs for engaging in real and meaningful communication (Nunan, 1989; Tudor, 2001), the learning process can become more enjoyable and purposeful. Therefore, teachers should clearly define the goals of a particular task, keeping in mind the relevance and value of the task goals to the learners.

Task interactiveness implies dynamic interaction and communication between learners in the educational environment, which is closely related to the physical task component of setting in Nunan's (1989) framework. A task may require learners to work individually, in pairs, in groups or as a whole class. While each interactional pattern may engage different cognitive, emotional and motivational orientations of learners, learning situations in which individuals act as active participants are revealed to be more stimulating (Dörnyei, 2001b, 2002). Thus, tasks that provide opportunities for students to interact with each other, which assign specific roles to each learner, and that require the involvement of all participants in completing the activity can benefit learners by reducing teacher dominance, promoting collaboration among learners, and reducing language anxiety (Dörnyei, 2002; MacIntyre, 2002; Richards & Rodgers, 1986; Robinson, 2002; Tudor, 2001).

Creating a dynamic classroom environment with peer support can also influence the motivational processing of individuals during task completion (Dörnyei, 2002). Dörnyei (2002) elaborates on the 'co-constructed' aspect of task motivation, in which peer influences directly affect task participants' motivation in a pair work activity. In his study focusing on the participants' language output in a communicative speaking task,

Dörnyei found that the task motivation of participants was dependent on one another. In other words, "If one is paired up with a highly motivated or unmotivated partner, this will affect the person's disposition towards the task; that is, task motivation will be *co-constructed* by the task participants, with the interlocutor either pulling 'up' or 'down' the speaker" (Dörnyei, 2002, p. 153). This finding also has implications for teachers in assigning particular students to groups for completing a task.

The final motivational task aspect concerns the extent to which learners are given opportunities to make their own decisions while carrying out the task. This aspect of learning tasks is referred to as 'task control' because it implies the level of control that learners have over the activity. Although students usually cannot make decisions about whether to be engaged in an activity or not, they can make decisions concerning the way a task is performed (Dörnyei, 2001b). For example, students can decide how much time to devote to the activity, whom they will work with, what goals they would like to pursue, and how they can manipulate the task information. It is the teacher's responsibility to involve students in such decision-making processes, because when learners feel they are in command of the task they exhibit higher levels of motivation.

Providing students with the opportunity to take responsibility for their own learning through task control is related to the idea of autonomy, an important need for self-determined behavior (Deci & Ryan, 1985). In educational contexts, autonomy-supportive environments have been found to foster greater motivation when compared with controlled environments (Assor et al., 2002; Dörnyei & Otto, 1998; Ryan & Deci, 2000b). Tasks can cater to the innate need for autonomy by developing interest in learning (Schiefele, 1991; Schraw et al., 2001) and by increasing task engagement if

they give students a sense of choice (Csikszentmihalyi, 1997; Deci & Ryan, 2000; Egbert, 2003; Greene, Miller, Crowson, Duke & Akey, 2004; Noels et al., 2000; Pintrich, Marx & Boyle, 1993). In this view, tasks that give learners opportunities to exercise control through choices can potentially increase students' affective engagement in language classrooms.

Choice

Choice refers to the availability of options among which individuals make selections that best pertain to their needs, interests and skills (Williams, 1998). Individuals experience choice when a selection is made from an array of meaningful options that are equally attractive (Lawler, 1992; Williams, 1998). While choice has been extensively manipulated in organizational theories (Lawler, 1992; Tallman & Gray, 1990; Williams, 1998), the significance of choice in initiating self-determined behaviors could provide better insights into the effects of choice provision on motivation, which can also have valuable implications for educational settings.

With respect to self-determination theory (Deci & Ryan, 1985), the notion of choice can be best approached from the perspective of 'causality orientations'. The concept of causality orientations implies that individuals differ in their motivational orientations depending on how they interpret the environment and what they perceive the causes of their actions are. Deci and Ryan posit that individuals are oriented to interpret events as informational (autonomy promoting), controlling, and amotivating to varying extents. They refer to these orientations as 'causality orientations' and label them as autonomy orientation, control orientation and impersonal orientation respectively. When people are autonomy-oriented, they base their actions on their

personal goals and interests, and are ready to accept responsibility for their own behaviors. Thus, autonomy oriented individuals are more intrinsically motivated. Control orientation, on the other hand, involves individuals who perceive their actions are initiated and controlled by external demands, such as deadlines, rewards, or threats. People high on impersonal orientation believe that their behaviors and the outcomes are beyond their intentional control. Therefore, they feel ineffective, experience incompetence, and are amotivated.

Among these three orientations, choice, according to Deci and Ryan (1985), is central to the autonomy orientation of individuals:

> When autonomy-oriented, people use available information to make choices and to regulate themselves in pursuit of self-selected goals. Whether intrinsically motivated or extrinsically motivated, behavior based on choice is self-determined and emanates from the integrated sense of self that underlies the autonomy orientation (p. 154).

Deci and Ryan (1985) refer to choice from a motivational perspective; thus, their conceptualization is different from a cognitive view of choice (Bandura as cited in Deci & Ryan, 1985). The implications of a motivational conceptualization is that "many behaviors are automatic and do not involve genuine choice" (Deci & Ryan, 1985, p. 155). To Deci and Ryan, behavior that is truly chosen is behavior in which the individual could actually consider other options, such as not initiating the action. If this flexibility is not perceived by the individual, the behavior does not represent genuine choice.

While this perspective on choice is understandable, educational contexts rarely encourage behaviors that are truly chosen. The learning environment mainly requires compliance to certain rules and standards, and therefore learners, for the most part, cannot have genuine choice in their behaviors. Deci and Ryan (1985) account for

individuals' behaviors in such controlled environments in their discussion of autonomy orientation, referring to this behavior as 'choiceful accommodation'. Their explanation of choiceful accommodation is that when individuals meet situations that are nonresponsive and cannot be changed, they can accommodate the situation and regulate their behaviors by events in the environment that are interpreted as autonomy-supportive, as opposed to controlling. For example, in educational settings, learners can enjoy the freedom to choose the goals they value the most. They can identify the activity with their own goals and beliefs, and try to internalize the course requirements that have been externally imposed upon them. Rather than completing an assignment because they feel they are obliged to, learners can identify with the task and come to value it. It is the integration of the behavior into one's sense of self that characterizes choiceful accommodation. Through the process of integration, learners can transform initially external regulations into internal regulations.

The autonomy orientation of learners in educational contexts as characterized by choiceful accommodation can be initiated by creating environments that are autonomy-supporting. Choices that are afforded in such contexts can eventually promote intrinsic motivation or integrated regulation (Deci et al., 1994; Deci & Ryan, 1985). Intrinsic motivation and integrated regulation are believed to function when the learner feels free from control (Assor et al., 2002; Deci & Ryan, 1985; Dörnyei & Otto, 1998; Noels et al., 2000; Pelletier et al., 2002; Ryan & Deci, 2000b; van Lier, 1996). This cyclic relationship implies that choice increases self-determination by catering to individuals' inherent need for autonomy, and consequently self-determined individuals who are more able to choose freely become more intrinsically motivated to learn.

Characteristics of Genuine Choices

Most studies that have manipulated choice as a motivation-related variable have illuminated the importance of giving individuals choice (Deci & Ryan, 1985; Dörnyei, 2003; Dörnyei & Otto, 1998; Noels et al., 2000; Pintrich et al., 1993). However, what constitutes choice and the ways in which it is afforded show variations in the investigation of this phenomenon. The reason why studies have yielded diverse findings regarding the effects of choice on learning, performance and motivation could partially be explained by the way researchers differently interpret choice. Based on Deci and Ryan's (1985) autonomy orientation theory, however, choices can be interpreted as true choices only on the condition that the choices are meaningful and relevant to student needs and goals, and if the choices are in appropriate balance with individuals' available skills. Before discussing these choice characteristics, it could be useful to first explore what choice is not contingent upon.

While some researchers have characterized choice by the extensive number of options that are available to a person, many other studies have challenged this assumption (Averill as cited in Williams, 1998; Iyengar & Lepper, 2000). In fact, a study conducted by Iyengar and Lepper (2000) revealed that "the provision of extensive choices does not necessarily lead to enhanced motivation when compared with contexts that offer a limited array of choices" (p. 999). In the study, some students were given 6 and others 30 essay topics to write on. The number of students who completed the task and the quality of their writing were assessed to explore the effect of choice on learners' intrinsic motivation. The results indicated that students assigned to the limited-choice conditions outperformed those who had more choices both in the number of assignments

that were submitted and in the quality of performance. Based on these results, Iyengar and Lepper (2000) posit that giving too many options may exert pressure on individuals, and they may feel overburdened by the choices they make. This would eventually undermine motivation. Thus, choice, as a motivating factor, cannot be attributed to the provision of large number of alternatives.

Rather than the sheer number of alternatives, choice has motivational power when the options that are provided are meaningful for the learner (Assor et al., 2002; Flowerday & Schraw, 2000; Schiefele, 1991; Schraw et al., 2001; Williams, 1998). Assor et al. (2002), in their study on the effects of autonomy-enhancing environments on children's engagement in schoolwork, concluded that choice provision could support the need for autonomy only when the choices that are provided are well-suited to learners' personal goals and are of interest to them. If the choices are perceived irrelevant or meaningless, choice provision is not likely to produce positive outcomes. Thus, relevance of options is essential for promoting intrinsic motivation in learners.

Choices afforded by classroom activities are also perceived as true choices when the options are congruent with the perceived skills of the individual. This is closely related to the concept of competence and optimal challenge in self-determination and flow theories. The intrinsic need for competence moves learners to seek new challenges, and choice gives them the opportunity to freely engage in activities that provide interest and optimal challenge (Csikszentmihalyi, 1975, 1988, 1997; Deci & Ryan, 1985). Learners choose from among alternatives those that best match their interest. They then have the opportunity to balance task challenge with their available skills (Csikszentmihalyi, 1975, 1988). Cordova and Lepper (1996) found that choice had

positive influences on learners' perceived competence when they preferred to engage in tasks that offered challenge. Consequently, the inherent psychological need for competence (Deci & Ryan, 1985, 2000; Ryan & Deci, 2000a) and positive affect (Csikszentmihalyi, 1975, 1997; Egbert, 2003; Schiefele, 1991; Schraw et al., 2001) can be sustained by choice provision.

Motivational Influences of Task Choice in Educational Contexts

Investigations into the concept of choice in learning environments have revealed the impact of choice on behavioral and psychological outcomes. The motivational power of choice is particularly important considering its relation to the autonomy orientation of self-determined individuals and to an integrated sense of one's self through choiceful accommodation (Deci et al., 1994; Deci & Ryan, 1985). Thus, meaningful choices provided by instructional tasks are believed to promote learner motivation by increasing interest and task engagement, which in turn sustain positive affect and improved performance, all of which may have significant implications for learning outcomes.

In educational settings, choice has been found to positively correlate with interest and task engagement (Csikszentmihalyi, 1997; Deci & Ryan, 2000; Egbert, 2003; Greene et al., 2004; Schiefele, 1991; Schraw et al., 2001). Schiefele (1991) defines interest as a "content-specific motivational characteristic" (p. 299) that promotes intrinsic motivation and high levels of performance. Interest is not a personality trait, but rather a concept related to the valences attributed to specific topics or tasks. Thus, learners could be given opportunities to adjust the attractiveness of tasks by being afforded choices in the tasks they are engaged in. Involvement in topics or activities that interest learners, eventually motivate them to stay involved in the tasks.

Tasks that give learners choice may engage learners' interest in different ways. Human beings are inherently curious to explore their environments (Deci & Ryan, 1985; Dörnyei, 1994). Thus, when learners are offered choices that make them curious or that appeal to their interest, the satisfaction of their curiosity will result in intrinsic motivation. Choice is also motivating by giving learners the chance to select material or topics that are familiar to them (Gabrielson, Gordon & Engelhard, 1995; Schraw et al., 2001), which in turn enhances task engagement. Lastly, choice is believed to increase interest and task engagement by giving students a greater sense of responsibility and ownership (Benson, 2001; Flowerday & Schraw, 2000; Schraw et al., 2001).

Giving students choice over tasks in the classroom also has the potential to enhance positive affective response. In fact, studies investigating emotion in classrooms support the idea that learners' affective response and involvement are closely related to the instructional context such as task characteristics (Meyer & Turner, 2002). Measurements of subjective experiences during task completion revealed that topic interest is positively correlated with enjoyment, satisfaction and concentration (Schiefele & Csikszentmihalyi as cited in Schiefele, 1991). This assumption was further supported by Schraw, Flowerday and Reisetter's (1998) investigation into the effects of choice on learners' cognitive and affective engagement in reading. The results of their study indicated that while choice had no substantial effect on cognitive measures of engagement, college students exhibited positive affective responses to reading texts that they had been allowed to select.

Choice can further promote the quality of task performance. However, choices afforded by classroom activities are influential on learners' task performance when the

options are congruent with the perceived skills of the individual. A study measuring the effects of examinee-selected questions, for example, revealed an overall positive association between the choice of a preferred topic and the essay score (Allen, Holland & Thayer, 2005). The results were interpreted on the assumption that examinees selected the topics on which they believed they could write the best essay, that is, ones which best matched their skills and abilities. Teachers have also reported the benefits of instructional choice on increased task performance (Flowerday & Schraw, 2000; Meyer & Turner, 2002; Schraw et al., 2001).

While the literature presenting the motivational impact of meaningful classroom choices is rich, the motivational potential of choice with regard to the source of choice has not been thoroughly explored. Source of choice implies the initiator of options. In task design, for example, choices can be afforded by the teacher or they can be generated by the students themselves. Whether there is a difference in the motivational impact of choice when it is teacher-assigned or student-generated has not been the focus of research. In accordance with the focus of this study, an investigation into the impact of different choice provision procedures in tasks as indicated by the source of choice may have implications for teachers in designing and presenting tasks that include choice in order to enhance student affective engagement.

Conclusion

In this chapter, the literature on flow theory, its relation to self-determination theory, conditions and measurement of flow, and flow in language learning contexts was reviewed. Tasks and the benefits of providing choices on tasks in order to enhance students' affective motivation were also discussed. The next chapter is the methodology

chapter, which reports on the participants of the study, the instruments used to obtain data, the data collection procedures and the data analysis.

CHAPTER III: METHODOLOGY

Introduction

This study investigates whether tasks that provide choices through two different procedures, teacher-assigned versus student-generated, have a positive influence on students' affective responses during task engagement.

The study investigated the answers to the following research questions:

1. Does choice provision affect students' overall affective engagement in tasks?
2. Is there a difference in students' perceptions of the motivational impact of tasks when choices are teacher-assigned or student-generated?
3. Does choice provision in task design have an impact on students' perceptions of different dimensions of flow?
4. Does interactional pattern affect students' affective engagement in tasks in ways parallel to choice?

This chapter will provide information about the participants, instruments, data collection procedures, and data analysis.

Participants

The study was conducted at Middle East Technical University (METU) with 26 freshman students and one teacher from the Department of Modern Languages. This study was conducted to investigate students' affective responses to tasks that were included in the syllabus of the English 102 course, which primarily focuses on the

development of academic writing skills. Students in a single section of the English 102 writing course and their instructor were chosen to participate in the study. This group was selected because the instructor was willing to participate and had recently conducted a research study in an MA program, and therefore, was familiar with the procedures for this study.

The students were studying in the Civil Engineering Department. Personal and educational background information about the participants was collected from the selected group (see Appendix A for a copy of the survey). The data collected from the participants included information about their gender, whether they had attended the preparatory program at METU, their proficiency exam scores and whether they had any previous experiences with the English 102 course, as shown in Table 1.

Table 1

Participant Background Information

Group size	Male	Female	N Prep.	N Eng 102	M proficiency exam
26	21	5	26	26	69

Note. N Prep. = Number of students who attended the METU preparatory program;
N Eng 102 = Number of students taking the English 102 course for the first time;
M proficiency exam = Mean for proficiency exam scores

The proficiency exam, prepared locally by a testing committee, is a test aimed to measure students' level of English proficiency. The exam includes sections on grammar and vocabulary, reading, listening, and writing. Based on the scores obtained from the proficiency exam, students are placed in the appropriate level in the METU preparatory program. The data collected from the background information survey revealed that participants' proficiency exam scores ranged between 60 and 79, with a mean of 69. The distribution of the proficiency exam scores over the mean is displayed in Table 2.

Table 2

Distribution of Proficiency Exam Scores Over the Mean

	Total	≤ 69	> 69
N	26	15	11

Note. N = Number of participants

Participants were also asked to rate, on a 4-point Likert scale, whether or not they thought the English 102 course would help them write better in English. The responses ranged from 1 (strongly disagree) to 4 (strongly agree). All students agreed that the course would improve their writing skills, with 5 participants marking 4 (strongly agree) and the remaining majority, 21 students, marking 3 (agree).

Instruments

A short survey on background information about the participants and a perception questionnaire to measure students' affective responses to tasks were the two instruments used to collect data in this study. Other materials included a weekly task chart and a list of task types for the teacher.

As mentioned above, background information was collected through a survey administered at the beginning of the study (see Appendix A for a copy of the survey). The survey consisted of 9 short items on participants' previous experiences with the English 102 course, their proficiency exam scores, whether they had attended the preparatory program at METU and whether they believed the course would improve their writing skills. The data collected from this survey was used to conduct analyses involving the relationship between background information and perception questionnaire results. A consent form was attached to the background survey, which informed students about the study and ensured the confidentiality of their responses to the perception

questionnaire if they agreed to participate (see Appendix B for a sample of the consent form).

The perception questionnaire (see Appendix C for questionnaire sample) was the main instrument used to collect data in this study. This questionnaire was regularly administered during the six weeks of this study, immediately after the completion of each designated task. The questionnaire was designed to measure students' perceptions of their affective experiences concerning the tasks they had just been engaged in. The perception questionnaire used in this study was directly taken from Egbert's (2003) study, which investigated flow in language learning. She had also adapted this questionnaire from a questionnaire used in computer-mediated environments by Webster, Trevino and Ryan, and Trevino and Webster (as cited in Egbert, 2003). She adapted the questionnaire by changing the content from computer-focused items to learning tasks and by adding two more items to the original scale. No changes were made relating to the structure of the items. The reported alpha reliability of the adapted perception questionnaire was measured at $r = .82$.

Egbert's (2003) questionnaire consists of 14 items, which reflect her four-faceted framework of flow including the dimensions of challenge, attention, interest, and control. The items in the questionnaire are associated with each of these four flow dimensions, enabling the questionnaire to give insights into the relative contribution of each dimension during an experience of flow. Participants responded to each item in the perception questionnaire on a Likert scale, which provided the respondents with 7 possible responses ranging from 1 (strongly disagree) to 7 (strongly agree).

For the purpose of preventing any possible language interference during implementation, the original questionnaire, written in English, was translated into Turkish through a back translation process (see Appendix D for a sample of the translated questionnaire). First, I translated the questionnaire into Turkish and then asked a colleague in the MA TEFL program at Bilkent University and another colleague at METU, my home institution, to translate the Turkish version into English. By comparing the back translation received from the two colleagues with the original questionnaire, necessary changes were made on the Turkish version of the questionnaire.

In order to ensure the comprehensibility and clarity of the translation, the translated version of the questionnaire was pilot-tested with two classes consisting of 37 freshman students in total. The first pilot group was chosen because the student profiles in this group, which included Electrical and Electronics Engineering students, were similar to those of the experimental group. Moreover, students in the Civil Engineering Department and the Electrical and Electronics Engineering Department both followed curricula largely based on quantitative studies. The second group, studying Political Science and Public Administration, was selected because at the time the pilot study was conducted whether the experimental group would be Civil Engineering students or Political Science and Public Administration students was not decided. The feedback collected from both groups was used to clarify some items and the questionnaire was revised for use one week prior to the actual study.

The difficulty of measuring a complex construct such as flow has been acknowledged by motivation and flow researchers (Csikszentmihalyi, 1975, 1988; Egbert, 2003; Massimini & Carli, 1988). However, surveys have been widely used in

measurements of flow in different areas, and these studies have revealed the use of surveys to be reliable data-collecting tools for exploring subjective experiences such as flow (Csikszentmihalyi, 1975, 1988; Egbert, 2003; Massimini & Carli, 1988; Wilkinson & Foster, 1997). In this study, the perception questionnaire survey used by Egbert (2003) was the main instrument for gathering data about students' affective responses during task engagement because it had been used in a similar way in Egbert's study.

For convenience, a weekly chart to help the instructor keep track of data and a list of task types that would be manipulated for the purpose of this study were also prepared in collaboration with the classroom teacher. The weekly chart was designed for the teacher to keep a record of tasks and their descriptions on a weekly basis (see Appendix E for a sample of the weekly chart). The chart was also used to keep a record of the perception questionnaires that students returned after each activity for the six weeks of the study. The chart included information about the number of tasks done in one week, the date the task was conducted, the task focus, a more detailed description of the task process, the interactional pattern, the type of choice provision, the number of students who completed the task, and the number of students who completed the questionnaire. The sections in the chart were discussed with the teacher before conducting the study.

The researcher and the course instructor prepared a list of tasks as the study progressed (see Appendix F for list of tasks). In order to maintain consistency with other sections of the course, the instructor mainly used the tasks in the English 102 course book, as well as self-designed tasks.

Data Collection Procedures

On February 23, 2005, I received permission from the Head of the Department of Modern Languages at Middle East Technical University to conduct my research. On the same day of my visit to the Head of the department, I got a list of the teachers who would be teaching the English 102 course in the spring term. Although the instructor who would participate in my study was predetermined, I used the list to select a group for piloting the translation of the perception questionnaire.

On February 25, the clarity of items in the Turkish translation of the questionnaire was pilot-tested with two English 102 sections, composed of Electrical and Electronics Engineering and Political Science and Public Administration students. These classes were selected because the participant teacher was teaching sections similar to these groups. Since the participant teacher and the researcher had not decided on the experimental group at the time the pilot study was conducted, the translated questionnaire was piloted with both groups. The respondents gave feedback on the comprehensibility of the items in the questionnaire and changes were made accordingly.

Also on February 25, a meeting was held with the course instructor. The teacher was given an orientation on the administration of the perception questionnaire and ways to record data on the weekly task chart. The perception questionnaire would be administered to the participants after each designated task during the treatment period. It was emphasized that the perception questionnaire would be administered immediately after the task was completed in order to collect more reliable data. It was also decided with the teacher that it would be better if the task descriptions and number of participants who responded to the questionnaire were recorded systematically in the

weekly chart after each task. A list of guidelines was prepared for the instructor to assist her with the procedures to be followed during the study (see Appendix G for the guidelines). All the documents and materials needed for the study were compiled in a folder and the teacher was introduced to an easy-filing system to collect, organize and record the data.

During the same meeting, a list of possible tasks to be covered in the course was also negotiated and prepared with the teacher. The tasks were selected primarily from the course book or from the teacher's prepared materials in order not to cause any changes in the scheduling of the course program. Besides this task selection process, however, regular meetings were held with the teacher on a weekly basis as well while the study was in progress to make adaptations in the tasks as necessary.

The designated tasks for this study included any activity which can be described as "a goal-specific, meaningful, and purposeful endeavor that is self-contained" (Egbert, 2003, p.508). These tasks had a focus on a wide array of skills including reading, writing, speaking, research or documentation skills. Although the English 102 course mainly focuses on the development of academic writing skills, because an integrated-skills approach is adopted in the curriculum, the tasks fall within a wide range of skills. These tasks were distributed according to the focus of each unit across the course syllabus. During some sessions, students had only one task to complete, whereas in other sessions, they worked on two tasks. Overall, students were engaged in approximately three designated tasks each week. The expected number of tasks for the six-week period of treatment was nineteen in total, resulting in nineteen perception questionnaires per student.

After determining the task types with the instructor, the study started on March 9, 2005 with the Civil Engineering group. On the same day, I visited the class and gave an orientation about the study to the students. The orientation took about fifteen minutes and included information about the purpose and duration of the study, and the procedures for completing the perception questionnaire. During this orientation, I emphasized the importance of marking all the items in the questionnaire and giving honest responses. Then, I distributed the short initial survey designed to collect information about their personal and educational background with a consent form attached to it. All the students willingly agreed to participate in the study and returned the forms. I was also present in class on the first day the perceptions questionnaire was given to ensure that its administration did not take more than three minutes.

The tasks in this study were designated in relation to the 'choice' variable in order to investigate whether giving students choices in tasks had any effect on their affective responses during task engagement. To this end, students were afforded choices for some of the activities among the nineteen tasks that were to be covered. The choice provision procedures for these activities included teacher-assigned choice and student-generated choice, both of which are explained below. Lastly, there were tasks in which students were given no choices.

For tasks in which the choice was teacher-assigned, the teacher provided students with a list of options to choose from. These options included listing of topics for reading, writing or discussion, or a list of exercises, activities, or reading texts from which students selected one or more to work on. The number of choices offered by the teacher did not surpass ten in order not to overwhelm students and possibly affect their

motivation and performance adversely (Iyengar & Lepper, 2000). With teacher-assigned choice, students were allowed to choose preferences among the topics or activities that were more appealing, or that they were more interested in or curious about.

In tasks that afforded student-generated choice, the teacher first provided a broad framework related to the theme of the book or a broader topic. Students then formed groups to generate and brainstorm on related topics of interest and then created their own lists. Each group then ranked the items on their list and selected the first two topics to report to the teacher. This procedure was followed in order to limit the choice options, similar to the assignment of a limited array of ten options in teacher-assigned choice. The teacher either compiled the highest-ranking topics from each group into a list and later distributed the list to the whole class, or displayed each group's top two topics on the blackboard. Later, students chose from the compiled topics they had generated. They were free to choose from the topics they had offered themselves, or the topics suggested by their peers.

Lastly, students were engaged in tasks in which they were afforded no choice. These tasks included the ones in the course book that students were required to complete without being provided any flexibility in their selection. The teacher assigned the topic or the task to be completed without involving students in the decision-making process.

Each of the three aforementioned choice provision procedures for tasks was implemented multiple times over the six-week period. During the study students were engaged in 19 tasks in total, with five tasks including teacher-assigned choice, four tasks including student-generated choice and the remaining 10 tasks affording no choice. The tasks reflecting the two choice provision procedures and the no-choice option were

decided through negotiation with the instructor and these tasks were randomly distributed over the six weeks of the study.

Due to the load of data, I collected the perception questionnaires from the instructor at the end of each week during the study in order to start entering the data on a regular basis. Students' responses to the perception questionnaire were entered each week using the Statistics Package for the Social Sciences (SPSS 11.05). I started entering data in the third week of March and continued systematic entry of new data until May1, 2005, the week during which the study ended. The treatment lasted for six weeks total as planned over an eight-week period; for two weeks in the study period, classes were canceled for administrative reasons.

Data Analysis

The data for this study was composed of quantitative data collected from multiple administration of the perception questionnaire. The data collected from both the pilot and the actual study were statistically analyzed using SPSS 11.05. Before running any statistical tests on the data, negative items in the questionnaire (3, 4, 10, 12) were reverse scored.

The pilot data was used to calculate a factor analysis. The factor analysis was conducted to investigate the relationship between the identified four flow dimensions of challenge, interest, control and attention in the perception questionnaire, as defined by Egbert (2003). Although the questionnaire did produce a four-factor analysis accounting for about 80% of the variance, the results from the factor analysis also revealed that these factors were very much intertwined, and therefore, not clearly distinguishable from each other. One possible reason for the factors not emerging clearly could be the small

pilot sample size (N = 37) or because of the interdependency of the four flow variables. I did not initially calculate the reliability of the questionnaire items since Egbert (2003) reported the alpha reliability of the perception questionnaire at r = .82. However, after the study was completed, items in the questionnaire were reexamined for internal consistency and the Cronbach's alpha of reliability was measured at .93.

At the analysis stage for the actual study, first, the overall motivational impact of tasks was explored by ranking the averaged mean scores of each task over all participants. For a more focused analysis, only the mean scores of the highest ranking and lowest ranking tasks were compared. Next, the number of students who were in flow and apathy during task engagement was established in order to determine which tasks stimulated the highest level of a flow-like experience and which ones resulted in apathy across participants. Two cut-off points were determined for this analysis. Respondents who scored 5.5 and above on any questionnaire were designated as having positive affective responses, or flow, to the tasks they were engaged in. Students who scored 2.5 and below, on the other hand, were designated as experiencing apathy. These cut-off points were determined drawing on insights from previous flow research (Massimini & Carli, 1988; Wilkinson & Foster, 1997) investigating an experience of flow in relation to language learning tasks. By calculating the number of participants who scored above 5.5 and below 2.5, the tasks that were most conducive to flow and the ones that were perceived as the least motivating were determined.

Subsequently, a two-way univariate ANOVA test and follow-up one-way ANOVA tests were run to explore the effects of choice and interactional patterns on students' overall affective engagement. Since the mean scores for tasks and the number

of students in flow were observed to be high in group activities, a research question was added to the study in order to explore the effect of interactional patterns on students' affective engagement. The two-way ANOVA test was used to investigate the main effect of choice and interactional pattern on student responses, and to determine whether the two variables interacted with each other. When significant results were indicated for both variables, one-way ANOVA tests were run in order to clarify the difference in responses between tasks that included different types of choice and different interactional patterns. Tukey's HSD was used for post hoc analysis in order to establish the exact location of the differences in both tests. For clarification purposes, means from 1.00 to 4.00 were determined to be negative and means from 4.01 to 7.00 were determined to be positive.

For a more thorough analysis of the impact of choice type, interactional pattern, and the possible mediating effect of these two variables on students' perceptions of the flow dimensions as reflected in the questionnaire, a multivariate analysis of variance (MANOVA) was used. Before running the test, however, an exploratory post-study factor analysis was conducted for all the responses collected from the participants for the 19 tasks. Paradoxically, the results of this analysis revealed that the perception questionnaire explicitly measured only three of the four flow dimensions. This finding was inconsistent with the initial factor analysis results for the pilot group and with Egbert's (2003) reported four-factorial model. Therefore, the dependent variables for the MANOVA test were defined according to the three identified flow dimensions of control, attention and interest. Then the test was run in order to explore the impact of choice type and interactional pattern on students' perceptions of task control, focused

attention, and task appeal (interest). The results from the MANOVA test were also used to explore the possible interaction effect between the two variables on students' perceptions of the three flow dimensions.

Lastly, to see if any difference existed in participants' affective responses in terms of their English proficiency level and gender, two *t*-tests were run. Student responses to the 19 tasks were averaged to form an affective engagement index at the individual level. Participants' reported proficiency exam scores from the background information survey were ranked and the class mean was calculated as 69. After this process, the top third and bottom third scorers were determined in order to run the *t*-test. This procedure was followed because the proficiency exam results of the participants were very narrowly spread from 60 to 79 and it was expected that a comparison between the extreme scores would yield more accurate results for the possible influence of English proficiency level. The second *t*-test was run to compare responses to the questionnaire between males and females.

Conclusion

In this chapter, information about the methodology of the study was presented with reference to the research questions. The section covered information about the participants of the study, instruments used, data collection procedures, and data analysis. The next chapter explains the data analysis procedures and presents the results of the data analysis.

CHAPTER IV: DATA ANALYSIS

Introduction

This study was designed to investigate whether tasks that provide choices through two different procedures, teacher-assigned versus student-generated, have a positive influence on students' affective responses during task engagement.

The study investigated the answers to the following research questions:

1. Does choice provision affect students' overall affective engagement in tasks?
2. Is there a difference in students' perceptions of the motivational impact of tasks when choices are teacher-assigned or student-generated?
3. Does choice provision in task design have an impact on students' perceptions of different dimensions of flow?
4. Does interactional pattern affect students' affective engagement in tasks in ways parallel to choice?

This study was conducted with the participation of one section of 26 freshman students who were taking the English 102 course at METU. Nineteen tasks were determined to provide a variety of choice types for the students. While some tasks did not offer any choice to students, other tasks included choice that was either teacher-assigned or student-generated. The 19 tasks were also varied in terms of interactional patterns; that is, they engaged learners' participation during task completion to differing

degrees. While some tasks allowed students to operate in groups, others required individual work or whole-class interaction.

This chapter presents findings on the overall motivational appeal of language learning tasks. The effects of different task properties on students' affective responses to the activities they were engaged in are also presented. The data for this study consisted of quantitative data which was collected through the regular administration of the same questionnaire after each designated task. The 14 items on the questionnaire were designed on a seven-point Likert scale. The positive statements in the questionnaire were assigned values ranging from 1 (strongly disagree) to 7 (strongly agree). The negative items in the questionnaire (3, 4, 10, 12) were reverse scored before running any statistical tests. Items in the questionnaire were also examined for internal consistency and the Cronbach's alpha of reliability measured at .93. The responses to the questionnaires were analyzed using both descriptive and inferential statistics.

To investigate the overall motivational potential of the designated tasks in this study, individual item scores for the 19 questionnaires were averaged for each participant in order to calculate mean values for each task. First, means for the 19 tasks for all students were rank ordered and analyzed for their motivational impact. The number of students who experienced flow and apathy, as defined by the questionnaire, for each task were then determined in order to explore which tasks resulted in more positive and negative affective experiences. This procedure was followed by setting cut-off points as 5.5 and above for flow, and 2.5 and below for apathy.

Since there were two variables, choice type and interactional pattern that might affect participants' overall affective engagement, a two-way analysis of variance was

conducted to investigate the extent to which choice and interactional pattern caused differences in students' affective responses. Since the results indicated significant main effects for both variables, the interaction effect between the two variables were further analyzed to investigate whether choice type or interactional pattern as predictor variables accounted more for the differences in students' affective responses to tasks. Then, two one-way ANOVA tests were run to analyze the comparisons between different choice types and interactional patterns and students' affective responses to tasks. When significant results were revealed in the ANOVA tests, Tukey's HSD was used for post hoc analysis in order to determine the location of the reported differences.

A multivariate analysis of variance (MANOVA) was further conducted to explore the impact of choice type, interactional pattern, and their interaction effect on the three flow dimensions associated with the items in the questionnaire. This investigation was informed by the results of the post-study exploratory factor analysis. The three identified flow dimensions were labeled as task control, focused attention and task appeal. The contribution of both variables to student responses for these three dimensions and their combined effect were analyzed.

Lastly, two *t*-tests were run to explore the possible differences in students' affective responses during task engagement in terms of their overall success in English as reflected by their English proficiency exam results and their gender.

The analyses of data obtained from the questionnaires will be discussed in detail under three broad sections below. The first section will begin with a presentation of the overall motivational impact of tasks by comparing flow and apathy results based on the means for each task over all students. This will be followed by the discussion of the

impact of choice types and interactional patterns on overall affective engagement in relation to two-way and one-way ANOVA results. The purpose of the next section is to present the effects of choice type, interactional pattern, and their interaction effect on students' perceptions of the three flow dimensions - task control, focused attention and task appeal. Finally, the possible effects of participants' English language proficiency and gender on their emotional states during task engagement will be discussed in the last section.

Analyses of the Overall Motivational Impact of Tasks

In order to explore which tasks stimulated the highest level of a flow-like experience in participants, first responses to individual items in the questionnaire were averaged for each participant. Based on the averaged individual scores, the means for each task for all students were computed. To analyze the overall motivational potential of tasks, participants' averaged mean scores on each task were rank ordered. Table 3 presents the ranking of all tasks based on the averaged mean scores accompanied by the choice type and interactional pattern for each designated task. For a more focused analysis and interpretation of the results, however, only the top third mean scores (i.e. the highest ranking six tasks) will be compared with the bottom third (i.e. the lowest ranking six tasks) mean scores.

Table 3

Ranking of Tasks According to Averaged Mean Scores Over All Participants

Rank	Task No	N	Task Means	Choice Type	Interactional Pattern
1	17	19	5.45	TAC	G
2	2	24	4.87	NC	G
3	15	23	4.83	SGC	G
4	18	20	4.81	TAC	I
5	12	15	4.70	TAC	G
6	19	20	4.62	SGC	G
7	16	23	4.61	NC	I
8	8	21	4.45	TAC	G
9	1	26	4.43	SGC	G
10	4	25	4.24	NC	W-C
11	13	14	4.10	NC	I
12	9	21	4.03	NC	W-C
13	11	25	4.01	NC	G
14	7	20	3.97	NC	I
15	14	23	3.96	SGC	I
16	6	26	3.65	NC	I
17	3	26	3.56	TAC	W-C
18	10	25	3.47	NC	W-C
19	5	25	3.34	NC	W-C

Note. N = number of participants; TAC = teacher-assigned choice; SGC = student-generated choice; NC = no choice; G = group work; I = individual work; W-C = whole-class

Table 3 demonstrates that of the six highest ranking tasks (tasks 17, 2, 15, 18, 12, 19), five tasks included some kind of choice, either student-generated or teacher-assigned. Moreover, five of these highest ranking tasks revealed an interactional pattern of group arrangement although they differed in their combinations with task choice type. In contrast, among the six lowest ranking tasks (tasks 7, 14, 6, 3, 10, 5), four of them were no choice tasks and the interactional patterns for these tasks were either individual (tasks 7, 14, 6) or whole-class (tasks 3, 10, 5).

Overall, the results indicate that tasks which provide learners with choice and allow students to operate in groups are more positively associated with positive affective

responses. On the other hand, tasks in which learners are afforded no choice and that do not facilitate collaborative work and dynamic interaction, as in individual or whole-class arrangements, co-occur more often with lower emotional states.

Flow versus Apathy Results

Based on insights from the broader analysis of the motivational impact of tasks across all participants as presented in the previous section, the number of participants in flow and apathy for each task was determined. In order to determine which tasks aroused positive emotional reactions and which ones resulted in negative affective responses, two cut-off points were determined as 5.5 and above for flow, and 2.5 and below for apathy. This determination procedure was informed by previous research (Massimini & Carli, 1988; Wilkinson & Foster, 1997) that investigated the quality of emotional experience in relation to tasks. By counting the number of students who scored 5.5 and above, and 2.5 and below for the 19 tasks, the flow and apathy results for each activity were determined. Table 4 shows the number of students in flow and apathy for each task.

Table 4

The Number of Participants in Flow and Apathy for Each Task Based on Ranked Mean Scores

Rank	Task No	N	Choice Type	Int. Pat.	Task Means	N apathy ≤2.5	N flow ≥5.5	Flow Designation
1	17	19	TAC	G	5.45	0	9	9
2	2	24	NC	G	4.87	0	7	7
3	15	23	SGC	G	4.83	0	5	5
4	18	20	TAC	I	4.81	0	5	5
5	12	15	TAC	G	4.70	1	5	4
6	19	20	SGC	G	4.62	0	5	5
7	16	23	NC	I	4.61	0	7	7
8	8	21	TAC	G	4.45	0	3	3
9	1	26	SGC	G	4.43	0	2	2
10	4	25	NC	W-C	4.24	3	3	0
11	13	14	NC	I	4.10	2	1	-1
12	9	21	NC	W-C	4.03	2	2	0
13	11	25	NC	G	4.01	2	0	-2
14	7	20	NC	I	3.97	0	1	1
15	14	23	SGC	I	3.96	2	2	0
16	6	26	NC	I	3.65	2	1	-1
17	3	26	TAC	W-C	3.56	4	0	-4
18	10	25	NC	W-C	3.47	5	0	-5
19	5	25	NC	W-C	3.34	7	0	-7

Note. N = number of participants; TAC = teacher-assigned choice; SGC = student-generated choice; NC = no choice; Int. Pat. = interactional pattern; G = group work; I = individual work; W-C = whole-class; Flow Designation = difference between the number of participants in flow and apathy

The mean value for the highest ranking task (17) was calculated as 5.45, and the lowest ranking task (5) had a mean value of 3.34. This indicates that overall, none of the tasks facilitated absolute flow or resulted in complete apathy for the class. However, the mean value of task 17 is very close to the cut-off point 5.5, which as noted previously, indicated positive emotional response similar to an experience of flow. Despite these findings, the number of students in flow and apathy presented in Table 4 reveal a general

pattern of flow among participants for higher ranking tasks and apathy for lower ranking tasks.

To establish which tasks stimulated a positive response and which ones resulted in a negative response, the number of participants experiencing flow and apathy for each task were set as criteria, with a preset difference of 2 between the number of participants in flow and apathy. In other words, if the number of students in flow for a specific task exceeded the number of students in apathy for the same task by 2, that task was designated as being flow-conducive. Similarly, if the number of students in apathy exceeded the number of students in flow for the same task by 2, that task was designated as being unmotivating.

Following this procedure, as revealed in the last column in Table 4, tasks which resulted in equal number of participants in flow and apathy and tasks in which the difference between the number of participants in flow and apathy were below 2 were ignored for the purpose of this analysis. The flow and apathy results in Table 4 indicate that the top ranking nine tasks (17, 2, 15, 18, 12, 19, 16, 8, 1) were flow conducive while 4 of the ten bottom ranking tasks (11, 3, 10, 5) were apathy conducive. Among these four tasks designated as apathy conducive, tasks 3, 10 and 5 were also ones that produced the bottom three means, 3.56, 3.47, and 3.34 respectively.

The data presented in Table 4 further reveals a general pattern for the presence of choice and group interaction in the top nine tasks, which also most facilitated flow in participants. Of these nine tasks, 7 tasks included choice (tasks 17, 15, 18, 12, 19, 8, 1) and 7 tasks included group interaction (tasks 17, 2, 15, 12, 19, 8, 1). In contrast, the bottom ten tasks reveal a trend for the absence of choice in eight tasks (4, 13, 9, 11, 7, 6,

10, 5) and an interactional pattern including mainly either whole-class arrangement (tasks 4, 9, 3, 10, 5) or individual work (tasks 13, 7, 14, 6).

Task 17, the highest ranking task including choice and group work, with a mean value of 5.45, produced the highest number of participants in flow (n = 9) and no participants experiencing apathy. Tasks 2 and 16 produced the second highest number of participants in flow (n = 7), but these two tasks were no choice activities with different interactional patterns. By comparison, task 5, which is a no choice and whole-class activity, with a mean value of 3.34, produced the highest number of participants in apathy (n = 7) and no participants in flow. Task 10 producing the second highest number of participants in apathy (n = 5) and task 3 resulting in four participants in apathy share the common characteristic of being whole-class activities. However, these two tasks differ in their choice types. These results imply that different combinations of choice types and interactional patterns may affect participants' affective responses during task engagement in different ways. These differences will be analyzed in the next section.

The Impact of Choice Type, Interactional Pattern and Their Interaction Effect on Overall Affective Engagement

The analyses in the previous section revealed a general pattern of more choice and greater group interaction among higher ranking tasks, and an absence of choice and more passive interaction among lower ranking tasks. However, the distribution of different choice types and interactional patterns across the 19 designated tasks did not generate consistent results. In other words, the tasks manifested differences in the combinations of types of choice (student-generated, teacher-assigned, and no choice) provided to participants and in the interactional patterns (group, individual, whole-class)

adopted during task completion. Since there were two distinct variables that might have influenced student responses, a two-way ANOVA test was run in order to explore the impact of choice type and interactional pattern on student affective responses. The two-way ANOVA test was also used to interpret possible effects of the interaction between the two variables on students' affective engagement. Table 5 shows mean values of intersections between different choice types and interactional patterns.

Table 5

Comparison of Mean Values for Intersections between Choice Type and Interactional Pattern

	Interactional Pattern					
	Individual		Group		Whole-class	
Choice Type	M	sd	M	sd	M	sd
Student-generated choice	3.96	1.19	4.62	0.92	-	-
Teacher-assigned choice	4.81	0.88	4.86	1.16	3.56	0.97
No choice	4.11	1.15	4.43	0.99	3.59	1.08

Note. M = mean; sd = standard deviation

Table 5 demonstrates that tasks which included a combination of teacher-assigned choice and group work produced the highest mean (4.86). This was followed by tasks characterized by teacher-assigned choice and individual work (M = 4.81). Overall, the results reveal higher mean values for tasks in which the interactional pattern is individual or group, whereas whole-class interaction produced the lowest mean values even when choice was afforded. More positive mean values were also observed for choice inclusive tasks when compared to no choice tasks. In order to determine the effect of choice type and interactional pattern on students' affective engagement and to explore whether there was an interaction between these two variables, tests of between-

subject effects were analyzed. The results of the two-way between-subjects univariate analysis of variance are presented in Table 6.

Table 6

Two-way ANOVA Results for Choice Type, Interactional Pattern and Their Interaction Effect

Variables	SS	df	MS	F	R Squared
Choice type	9.99	2	4.99	4.36*	.021
Interactional pattern	60.72	2	30.36	26.51*	.114
Choice Type & Interactional pattern	6.56	3	2.19	1.91	.014

Note. SS = sum of squares; df = degrees of freedom; MS = mean square; F = variance; R Squared = total variance explained in outcome by variables
*$p < .05$

The results in Table 6 reveal significant main effects for both choice type and interactional pattern. The R squared values indicate that while approximately 2% of the variance in responses to the questionnaire is accounted for by choice, interactional pattern accounted for 11% of the total variance. Although the R squared values are not very high, the results show that both variables account for the difference in student affective engagement significantly. However, the interaction effect between the two variables was not significant and accounted for only 1% of the total variance.

A two-way between-subjects univariate analysis of variance yielded positive significant main effects for both choice type and interactional pattern. Since each of these variables included different levels, one-way ANOVA tests were run to compare the differences in affective engagement among the three different choice types and interactional patterns included in tasks. The comparisons between tasks including three different choice types will be analyzed before a comparison between the three interactional patterns.

Choice Types ANOVA

Before the treatment started, the researcher and the course instructor determined the types of choice that would be offered to participants for the 19 designated tasks. Of the total number of tasks, 5 tasks included teacher-assigned choice, 4 tasks included student-generated choice and 10 tasks afforded no choice. In order to compare participants' overall affective responses to tasks including one of the three choice types, participants' responses to the perception questionnaires were analyzed by calculating individual student means for each task and by running an ANOVA test. Table 7 shows mean values of overall affective responses to tasks including student-generated choice, teacher-assigned choice and no choice on a 7-point Likert scale.

Table 7

Comparison of Mean Values for Task Choice Types

Choice Types	N	M	sd	F
Student-generated choice	92	4.45	1.03	9.122*
Teacher-assigned choice	101	4.52	1.20	
No choice	228	4.02	1.14	

Note. N = number of task participants; M = mean; sd = standard deviation; F = variance

*$p < .05$

The results in Table 7 indicate that all the mean scores are positive, but a significant difference exists between the three choice types. In order to establish the exact location of this difference, Tukey's HSD was applied as a post hoc test. The results from the Tukey's test are presented in Table 8.

Table 8

Tukey's HSD Results for Task Choice Types

Choice Types	MD	SE
Student-generated & Teacher-assigned	0.06	0.16
Student-generated & No choice	0.44*	0.14
Teacher-assigned & No choice	0.50*	0.14

Note. MD = mean difference; SE = standard error
*$p < .05$

Table 8 demonstrates that the affective responses to tasks in which the choice was student-generated and teacher-assigned did not differ from one another significantly. Tasks that did not include any choice, however, showed a significant difference from the other two choice types at the $p < .05$ level. It was concluded from these results that tasks offering learners choice, whether student-generated or teacher-assigned are more positively associated with improved emotional states during task engagement than tasks which afford no choice. The results further confirm the high number of participants in flow for choice-inclusive tasks as presented in the previous section.

Interactional Patterns ANOVA

Although the tasks used in this study were not designated in relation to the interactional patterns during task completion, the researcher asked the course instructor to record the interactional pattern followed in each task. The level of interactiveness (group, individual or whole-class) during participants' engagement in tasks was initially determined by the course instructor and not controlled by the researcher because it was not the focus of this study. However, the results indicated that tasks which allowed students to act as active participants in interactional group work produced the highest

number of participants in flow. These tasks also produced the highest mean values. Therefore, a research question to explore this was added to the study, and a comparison between different interactional patterns during task engagement was pursued.

Among the 19 tasks which the participants completed during this study, 8 tasks included group work, 6 tasks included individual work, and 5 tasks required whole-class arrangements. The reported selection criteria for the interactional pattern of each task were either the nature of the task or the course instructor's personal preference. In order to compare participants' overall affective responses to tasks including one of the three interactional patterns, participants' responses to the perception questionnaires were analyzed by running an ANOVA test. Table 9 presents mean values of overall affective responses to tasks including group work, individual work and whole-class participation.

Table 9

Comparison of Mean Values for Interactional Patterns

Interactional Patterns	N	M	sd	F
Group work	173	4.64	1.03	30.83*
Individual work	151	4.18	1.15	
Whole-class	97	3.58	1.05	

Note. N = number of task participants; M = mean; sd = standard deviation; F = variance

*$p < .05$

The results in Table 9 show that the mean values of affective responses to tasks that include group work are the most positive while that of whole-class is negative. The ANOVA test also revealed positive mean values for tasks done individually. The results further indicate that a significant difference exists between the three interactional patterns. Tukey's HSD was applied as a post hoc test to determine where the difference in the results lay. The results from the Tukey's test are presented in Table 10.

Table 10

Tukey's HSD Results for Interactional Patterns

Interactional Patterns	MD	SE
Group work & Individual work	0.46*	0.12
Group work & Whole-class	1.06*	0.14
Individual work & Whole-class	0.60*	0.14

Note. MD = mean difference; SE = standard error
*$p < .05$

As can be seen in Table 10, there is a significant difference between participants' affective responses during engagement in tasks that include group work, individual work and whole-class interaction. Tasks that gave students the opportunity to operate in groups produced significantly more positive responses than tasks requiring either individual or whole-class organization. Tasks requiring individual organization also produced significantly more positive responses than whole-class tasks. These results also correspond with the high number of participants in flow for tasks completed in groups and the high number of participants in apathy for whole-class tasks as presented in Table 4 in the previous section.

The Impact of Choice Type, Interactional Pattern, and Their Interaction Effect on Students' Perceptions of the Three Flow Dimensions

The perception questionnaire, which was the instrument used to measure students' affective responses to the tasks they were engaged in, was taken directly from Egbert's (2003) study of flow in EFL classrooms. She identified the conditions associated with flow along four dimensions including the balance between challenge and skills, attention, interest and control. The 14 items in the questionnaire were reportedly associated with each of these four flow dimensions, which were intended to index the

relative contribution of each dimension during an experience of flow. The initial factor analysis results for the pilot groups in this study supported Egbert's (2003) four-faceted framework of flow by producing four factors. However, the factors could not be clearly separated from each other.

One possible reason for the interdependency of the factors could have been the relatively small sample size (N = 37) in the initial pilot analysis for this study. Therefore, after the study ended, the researcher conducted a second exploratory factor analysis for the 494 responses (responses given by 26 participants on 19 tasks) collected throughout the whole experiment. Unlike the first analysis which supported Egbert's four flow dimensions, the second analysis produced only three factors for the perception questionnaire (see Appendix H for factor analysis results). While each question loaded on all three factors, assigning each question to the factor it loaded on most heavily did produce distinct factors supported by analysis of the questionnaire. Based on this analysis, it was concluded that while the questionnaire included items measuring the dimensions associated with interest, attention, and control, the survey items did not explicitly address the balance between challenge and skills. Table 11 shows the factors and the items associated with them.

Table 11

Items Loading on the Three Flow Dimensions in the Perception Questionnaire

Dimensions of Flow	Items
Interest	1, 2, 5, 6, 7, 10, 13, 14
Attention	4, 9, 12
Control	3, 8, 11

The table demonstrates that there is an unequal distribution of items measuring the three flow dimensions. While 8 items in the perception questionnaire are associated with interest, only 3 items measure attention and 3 items measure control. Since students' affective responses to tasks in this study were significantly related to choice type and interactional pattern, multivariate analysis of variance (MANOVA) for each of the three flow dimensions as reflected in the questionnaire was further analyzed. For the purpose of this analysis, the three dimensions of interest, attention, and control are labeled as task appeal, focused attention, and task control respectively.

A MANOVA test was run in order to explore the impact of choice type and interactional pattern on students' perceptions of task control, focused attention and task appeal. The results from the MANOVA test were also used to investigate the potential interaction effect between choice type and interactional pattern on students' perceptions of the three flow dimensions. Table 12 shows mean values of intersections between different choice types and interactional patterns for students' perceptions of each of the three flow dimensions.

Table 12

Comparison of Mean Values for Intersections Between Choice Type and Interactional Pattern for Each Flow Dimension

	Interactional Pattern					
	Individual		Group		Whole-class	
Choice Type	M	sd	M	sd	M	sd
	Perception of Task Control					
Student-generated choice	4.81	1.37	5.11	1.02	-	-
Teacher-assigned choice	5.35	0.98	5.04	1.11	3.76	0.89
No choice	4.46	1.11	4.77	1.09	3.81	1.20
	Perception of Focused Attention					
Student-generated choice	4.30	1.24	4.13	1.20	-	-
Teacher-assigned choice	4.30	1.17	4.70	1.53	3.41	1.05
No choice	4.14	1.47	4.52	1.32	3.63	1.35
	Perception of Task Appeal					
Student-generated choice	3.51	1.49	4.62	1.17	-	-
Teacher-assigned choice	4.80	1.16	4.86	1.35	3.54	1.17
No choice	3.97	1.28	4.27	1.24	3.49	1.19

Note. M = mean; sd = standard deviation

As can be seen in Table 12, students perceived they had the highest level of task control when the activity included teacher-assigned choice and was completed individually (M = 5.35). This was followed by tasks characterized by student-generated choice and group work (M = 5.11). Participants felt they had the least control over the activity when either choice was absent or the task required whole-class interaction. Overall, the findings suggest that both choice type and interactional pattern were influential on students' perception of task control.

The mean values for perception of focused attention also reveal a positive trend for choice inclusive tasks completed individually or in groups. Participants perceived

their attention to be more focused on tasks which included teacher-assigned choice and group work (M = 4.70), whereas lack of concentration was perceived in tasks including whole-class arrangements (M = 3.41 and M = 3.63) even when the tasks offered choice.

Lastly, the mean values for students' perception of task appeal suggest more positive trends towards correlations between teacher-assigned choice and group work (M = 4.86) and teacher-assigned choice and individual work (M = 4.80). In contrast, tasks in which choice is not afforded and the interactional pattern is whole-class were perceived as the least appealing among participants because they produced the lowest mean values. The descriptive statistics presented in Table 12 overall suggest a possible impact of both choice type and interactional pattern on students' perception of task appeal.

In order to investigate the effects of choice type and interactional pattern on students' perceptions of the three flow dimensions and to determine whether there was an interaction effect between these two variables, tests of between-subject effects for multivariate analysis of variance were analyzed. Table 13 presents the main effects for each of the variables and their interaction effect as revealed by the MANOVA test.

Table 13

Two-way Multivariate ANOVA Results for Choice Type, Interactional Pattern and Their Interaction Effect

	ANOVA Results				
Variables	SS	df	MS	F	R Squared
	Perception of Task Control				
Choice type	8.81	2	4.40	3.59*	.017
Interactional pattern	67.42	2	33.71	27.49*	.117
Choice type & interactional pattern	8.33	3	2.78	2.26	.016
	Perception of Focused Attention				
Choice type	1.94	2	0.97	0.53	.003
Interactional pattern	46.24	2	23.12	12.68*	.058
Choice type & interactional pattern	6.80	3	2.27	1.24	.009
	Perception of Task Appeal				
Choice type	19.43	2	9.72	6.17*	.029
Interactional pattern	67.12	2	33.56	21.33*	.094
Choice type & interactional pattern	14.26	3	4.75	3.02*	.021

Note. SS = sum of squares; df = degrees of freedom; MS = mean square; F = variance; R Squared = total variance explained in outcome by variables
*$p < .05$

As displayed in Table 13, results show significant main effects for both choice type and interactional pattern in terms of task control. This indicates that both variables significantly account for the total variance in responses to items associated with task control. However, the interaction effect between the two variables for perceived task control is not significant at the $p < .05$ level.

The results for focused attention, on the other hand, reveal a significant main effect for only interactional pattern ($F = 12.68$). In other words, students' perceptions of focused attention were not affected by the choice type, but rather influenced by the

degree of dynamic interaction during task completion. The R squared value for interactional pattern, despite not being very high, shows that it accounted for approximately 6 % of the total variance.

When compared to task control and focused attention, perceptions of task appeal produced the most significant results. The analyses for task appeal revealed statistically significant main effects for choice type ($F = 6.17$), interactional pattern ($F = 21.33$), and their interaction effect ($F = 3.02$). While choice type accounted for approximately 3% of the total variance, interactional pattern accounted for 9% of the differences in responses to items associated with task appeal. Finally, a significant mediational effect was found between choice type and interactional pattern, wherein the interaction effect between the two variables explained 2% of the total variance.

The results in Table 13 indicate that choice type contributes significantly to students' perceptions of task control and task appeal whereas interactional pattern reveals significant effects for all flow dimensions – task control, focused attention and task appeal. In order to determine the difference in students' perceptions of the three flow dimensions for tasks including different choice types and interactional patterns, Tukey's HSD was applied as a post hoc test. The results from the Tukey's test are presented in Table 14.

Table 14

Tukey's HSD Results for Choice Types and Interactional Patterns for the Three Flow Dimensions

	Dimensions of Flow					
	Task Control		Focused Attention		Task Appeal	
	MD	SE	MD	SE	MD	SE
Choice Types						
SGC & TAC	0.26	0.16	0.12	0.19	0.16	0.18
SGC & NC	0.71*	0.14	0.11	0.17	0.46*	0.15
TAC & NC	0.44*	0.13	0.22	0.16	0.63*	0.15
Interactional Patterns						
G & I	0.35*	0.12	0.23	0.15	0.59*	0.14
G & WC	1.19*	0.14	0.85*	0.17	1.10*	0.16
I & WC	0.84*	0.14	0.62*	0.18	0.50*	0.16

Note. SGC = student-generated choice; TAC = teacher-assigned choice; NC = no choice; G = group work; I = individual work; WC = whole-class; MD = mean difference; SE = standard error

*$p < .05$

As can be seen in Table 14, both types of choice produced a significant difference in students' perceptions of task control and task appeal when compared to no choice tasks. However, the difference in students' perceptions of these two flow dimensions was not significant between teacher-assigned choice and student-generated choice. The results also show that choice type did not significantly relate to students' perceptions of focused attention.

The results in Table 14 also demonstrate that there was a significant difference in students' perceptions of task control and task appeal for tasks completed in groups, individually and as whole class. The greatest differences in interactional patterns were observed between tasks completed in groups and as a whole class. The results further indicate that the difference in students' perceptions of focused attention was not significant between group work and individual work whereas whole-class activities

produced significantly different results from tasks including both group and individual organization.

The Possible Effects of English Proficiency and Gender on Participants' Affective Experiences During Task Engagement

In order to explore the possible differences in students' affective engagement in terms of their overall success in English as reflected by their English proficiency exam scores and their gender, two *t*-tests were run. Neither of the *t*-tests displayed a significant difference in participants' affective responses. The analyses for English proficiency and gender are presented below.

English Proficiency

A short survey of participant background information was administered on the first day the study started. The survey included a question concerning participants' past performance in English classes, specifically their scores on the English proficiency exam administered by METU. The data collected from the background information survey revealed that participants' proficiency exam scores ranged between 60 and 79, with the class mean calculated at 69 for the 26 participants. Before running the test, mean scores for individual responses to all questionnaires were averaged across each task. Individual scores were then ranked and the highest scoring top third (9 students) and lowest scoring bottom third (9 students) participants were determined, cutting off the middle 8 scores. A *t*-test was run to analyze the top third and bottom third scores for possible differences in responses to the questionnaires.

Table 15

Mean Values for Responses Given on the Perception Questionnaire by Ranking of English Proficiency Exam Results

Ranking of English Proficiency Exam Results	N	M	sd	t
Top third scorers	9	4.27	0.48	-0.56
Bottom third scorers	9	4.40	0.47	

Note. N = number of participants; M = mean; sd = standard deviation; t = t-value

The results displayed in Table 15 indicate that there is a non-significant difference between responses given by the top third scorers and bottom third scorers on the perception questionnaire. In fact, participants who scored lower on the proficiency exam show a tendency towards slightly more positive emotional states during task engagement, but this correlation is not significant at the $p < .05$ level.

Gender

In order to explore the possible differences between responses given on the perception questionnaire by males and females a second *t*-test was run. The class population consisted of 5 females and 21 males. The results of the *t*-test revealed that there is a non-significant trend towards more positive emotional experiences among females, as shown in Table 16.

Table 16

Mean Values for Responses Given on the Perception Questionnaire by Gender

Gender	N	M	sd	t
Male	21	4.19	0.45	-0.67
Female	5	4.36	0.71	

Note. N = number of participants; M = mean; sd = standard deviation; t = t-value

The *t*-test analysis of differences as shown in Table 16 yielded a *t* value of -0.67. This result was not significant at the $p < .05$ level. Although both mean values are

positive, it was concluded that gender did not significantly relate to improved emotional experiences.

Conclusion

The purpose of this study was to explore the motivational potential of tasks by investigating the effects of different choice provision procedures on students' affective responses during task engagement. In order to measure participants' affective responses, a perception questionnaire was administered for the 19 designated tasks used in this study. Although the main focus of this study was choice provision, the data collected through the questionnaires were analyzed in relation to both choice type and interactional pattern in order to account for how much of the difference in student responses were due to choice type and how much were related to interactional pattern.

A two-way ANOVA test revealed main effects for both choice type and interactional pattern. Although choice and interactional pattern significantly contributed to students' affective responses, the results of the two-way analysis of variance indicated interactional pattern as a slightly more predictive variable. However, the interaction effect between the two variables was not significant. The follow-up one-way ANOVA tests showed that both teacher-assigned and student-generated choice produced a significant difference in students' overall affective engagement compared to no choice tasks. The findings further suggested a significant difference in students' affective engagement when the interactional pattern during task completion was group, individual and whole-class.

A multivariate analysis of variance revealed that choice type was a significantly predictive variable for task control and task appeal, whereas interactional pattern was a

slightly better predictor for all the three flow dimensions including focused attention. The analysis for task appeal further yielded a significant positive interaction effect between choice type and interactional pattern.

Lastly, *t*-tests showed that English proficiency level and gender did not have a significant effect on students' affective engagement.

The next chapter is the conclusions chapter which discusses the findings, pedagogical implications, limitations of the study, and areas for further research.

CHAPTER V: CONCLUSIONS

Introduction

This study investigated the impact of choice on students' affective engagement in 19 tasks in an academic writing course. The study was conducted over a six-week period with 26 freshman students in a single section of an academic writing course offered at METU. Tasks were assigned to one of three categories – student-generated choice, teacher-assigned choice, and no choice – based on the provision of choice in the task design. The tasks also showed differences in their interactional patterns. While some tasks were completed in groups, others required participants to operate individually or in whole-class arrangement.

This chapter includes the findings and discussion, pedagogical implications, limitations of the study and suggestions for further research.

Findings and Discussion

The number of students in flow and apathy for each task and the results of ANOVA tests revealed that choice did produce a significant difference in students' overall affective engagement compared to no choice tasks. Moreover, the findings suggested a significant difference in students' affective responses to tasks when the interactional pattern during task completion was group, individual and whole-class. Although both choice and interactional pattern significantly contributed to students' affective responses, a two-way analysis of variance yielded a more positive effect for

interactional pattern. However, the interaction effect between choice type and interactional pattern was not significant. A multivariate analysis of variance further revealed a significant relationship between choice and affective engagement in terms of students' perception of task control and task appeal, whereas focused attention did not yield significant results. Lastly, *t*-tests showed that English proficiency level and gender did not have a significant effect on students' affective engagement. The findings in this section will be discussed in relation to the descriptive and inferential statistics presented in the data analysis chapter. The explanations for the anomaly cases revealed in flow versus apathy results will be the focus of the first section and possible reasons for the significance and non-significance of the differences obtained from univariate and multivariate ANOVA tests, and from *t*-tests will be discussed next.

Flow versus Apathy Results

The findings revealed that tasks which included choice, whether student-generated or teacher-assigned, and that allowed students to work in groups or individually produced more participants in flow, whereas no choice tasks and whole-class interaction resulted in more apathy. Despite this trend, the findings also revealed two no-choice tasks that produced high means and two choice tasks that produced low means. The reasons for such unexpected results on certain tasks might be that the nature and utility value of tasks caused differences in student perceptions of the task. Students' perceptions of the meaningfulness of choices for these tasks were also not explored. In addition, student motivational orientations were unknown, and the balance between participants' skills and task challenge was unexplored.

One of the observed anomaly cases was task 2, a no-choice group activity, which produced the second highest mean (4.87) with seven participants in flow. This task was a hands-on matching activity in which students were asked to identify the effectiveness of sample thesis statements based on certain criteria. Task 16, which was a no-choice individual activity (M = 4.61), also stimulated positive affective response and seven participants in flow. This was a fill-in-the-blanks type activity that enabled students to practice thematic vocabulary.

Although neither of the tasks included choice, the nature and interactional pattern of the tasks and the importance attached to them may have resulted in positive emotional responses among participants. Task 2 might have resulted in emotional arousal because the channel of communication involved tactile modes and the task allowed for dynamic interaction among participants (Dörnyei, 2001b). Also, because students are required to write essays with well-developed thesis statements for one of the themes in the course syllabus, they may have perceived these activities as relevant and of value to their future needs (Assor et al., 2002; Dörnyei, 1994; Pintrich, 1989; Woolfolk, 1993). Therefore, tasks 2 and 16, despite the absence of choice, were perceived as motivating by learners.

Other conflicting findings were observed in tasks 3 and 14. Although both tasks included choice, they were among the lowest ranking six tasks. While task 3 was a whole-class outlining activity including teacher-assigned choice, task 14 required students to write an essay on a topic they had chosen within the thematic framework in the book.

One reason for negative affective responses to these tasks may be that students did not perceive the choice options as meaningful or relevant. Therefore, choice

provision did not have any positive effect on their emotional motivation. Meaningfulness of options, however, is noted as the key feature of genuine choices (Flowerday & Schraw, 2000; Schiefele, 1991; Schraw et al., 2001; Williams, 1998). The reasons why tasks 3 and 14 were unmotivating may be that the choices in these tasks were not perceived as relevant and they were not internalized by the learners, as characterized by choiceful accommodation (Deci & Ryan, 1985). Because this study has not investigated students' perceptions of choice, generalizable conclusions cannot be drawn from the findings.

Also, the motivational orientation of learners may have resulted in negative affective responses to these tasks. Because their scores on the essay writing task contributed to their overall course grade, learners' engagement may have been influenced by external factors. Given the extrinsic motivation of the task, it is probable that the task goals had not been internalized by the students (Deci & Ryan, 1985; Ryan & Deci, 2000a, b). Since learners did not have a choice in doing the activity, they may not have valued and internalized the goals imposed upon them. Therefore, they may have fallen outside the range of identified regulation or integrated regulation on the continuum of internalization (Ryan & Deci, 2000b).

Another reason may be related to task challenge. If students felt that the task was not challenging enough or that it offered challenge that was beyond their available skills, it may have produced boredom or apathy among participants (Csikszentmihalyi, 1975, 1988, 1990, 1997; Deci & Ryan, 1985; Egbert, 2003; Massimini & Carli, 1988; Wilkinson & Foster, 1997). It is likely that for task 3, the students felt the task was not challenging enough, and for task 14, learners may have perceived the task as being too

challenging. However, the balance between task challenge and learner skills was not explored in this study. Thus, whether the tasks were optimally challenging for students is unknown.

Results of Statistical Tests

A two-way univariate analysis of variance showed that both choice and interactional pattern significantly contributed to students' overall affective engagement, with interactional pattern a better predictor of the differences in students' responses. The analysis further revealed a non-significant interaction effect between the two variables for overall motivational impact of tasks. However, a multivariate analysis of variance revealed a significant interaction effect between the two variables for task appeal, one of the flow dimensions reflected in the questionnaire. The reasons for the main effect for interactional pattern, the non-significance of the interaction effect between the two variables for overall motivational impact, and the significant interaction effect for task appeal can be related to the unequal number of choice and no choice tasks, the uncontrollability of the interactional pattern variable, and the unbalanced distribution of items measuring the three flow dimensions.

A possible reason why interactional pattern rather than choice type accounted for more of the variance in students' responses may be the unequal number of choice inclusive and no choice tasks. Unlike interactional pattern, which displays a relatively more even dispersion, choice type is unevenly distributed with the majority of tasks (10) including no choice, five tasks including teacher-assigned choice and only four tasks affording student-generated choice.

Related to the uneven dispersion of choice type across the 19 tasks, the fact that interactional pattern was not a controlled variable could also have affected the results. Since the interactional pattern was not decided by the researcher, and was therefore treated as a random factor, the combinations of choice type and interactional pattern were not balanced. Moreover, the combination of student-generated choice and whole-class was not present in any task, and therefore the relationship between them could not be calculated. This factor could have led to non-significant results for the interaction effect between the two variables for overall motivational impact.

While the unbalanced combinations might have led to a non-significant interaction effect for the overall motivational impact of tasks, the same factor, when combined with the high number of items measuring interest in the questionnaire, can account for the significant interaction effect for task appeal. The findings revealed that most choice tasks, regardless of being student-generated or teacher-assigned, were also group activities. Both choice inclusive tasks and group activities also produced the highest affective response. On the other hand, the lowest mean values were observed in tasks including no choice and whole-class arrangements, and four of the five whole-class tasks included no choice. These combinations show that the most desirable and undesirable conditions for the two variables co-existed in the tasks. Moreover, of the 14 items in the questionnaire, eight items measured the flow dimension of interest, which was highly correlated with both choice type and interactional pattern. This might have caused the two variables to produce a significant interaction effect for task appeal.

Two-way ANOVA results also revealed significant main effects for individual variables. A follow-up one-way ANOVA test showed significant differences in students'

overall affective responses to tasks including choice when compared to no choice tasks although there was not a difference between teacher-assigned and student-generated choice. A multivariate analysis of variance further revealed that choice had a significant effect on students' perception of task control and task appeal. The significant differences between choice and no choice tasks can be attributed to the perceived meaningfulness of the choices and the optimal balance between challenges and skills which are also essential for students to perceive control over the activity and find it appealing. The non-significant difference between student-generated and teacher-assigned choice, on the other hand, might be explained by the unexplored autonomy orientation of learners, which may also be related to cultural factors.

The main reason for the significant differences in students' affective engagement for tasks offering choice and no choice can be that the choices were mostly perceived as meaningful by the participants and well-suited to their personal and academic goals (Assor et al., 2002). Providing students with meaningful choices is also important for intrinsically motivated learning because choice feeds the inherent need for autonomy, an important need for self-determined behavior (Deci et al., 1994; Deci & Ryan, 1985; Ryan & Deci, 2000b). Thus, students may have perceived autonomy-support when engaged in choice inclusive tasks and developed a sense of responsibility and ownership (Flowerday & Schraw, 2000; Schraw et al., 2001). The significant effects of choice on students' perception of task control also support this conclusion.

Students may also have responded more positively to tasks offering choice because they were given the opportunity to adjust the difficulty level of the task to their available skills through the choices provided to them (Csikszentmihalyi, 1997; Deci &

Ryan, 1985; Egbert, 2003). Although optimal challenge was an unexplored factor in this study, it is likely that it might have affected students' responses to tasks in a positive direction. Since optimal challenge is closely related to intrinsic motivation, it is possible that students selected choices that matched their available skills and that interested them, which is also attributable to the significant correlation between choice type and task appeal.

The data analysis shows that that tasks including teacher-assigned choice display a slightly more positive trend for affective engagement than student-generated choice. The main reason for this trend could be the autonomy orientation of learners. While autonomy-supportive environments are believed to foster greater intrinsic motivation and integrated regulation, the autonomy orientation of individuals and the extent to which choices are integrated into one's sense of self through choiceful accommodation (Deci & Ryan, 1985) are the determiners of autonomous behaviors. A measurement of the autonomy orientation of learners, however, was not a part of this study. Moreover, if learners are culturally not accustomed to autonomous learning environments, they may need guidance and support in generating choices. Since learning contexts in which teacher-centered approaches are prevalent do not allow students much freedom and control over classroom activities, students may need time and support in adapting to more autonomous environments. Considering the fact that the participants were freshman students who had very different educational backgrounds, the factors discussed above can provide support for the slight preference for tasks including teacher-assigned choice rather than student-generated choice.

Similar to choice type, the three interactional patterns adopted during task completion in this study also resulted in significant differences in overall affective engagement. Group work activities yielded significant positive results as did individual work. However, whole-class interaction revealed a negative trend in the responses. The results from the multivariate analysis of variance further showed significant effects for interactional pattern on all the three flow dimensions. The reasons for the strong impact of interactional pattern on overall affective engagement and on the flow dimensions can be linked to the influence of peer collaboration and active involvement, the co-constructed aspect of task motivation, and opportunities for task control and focused concentration.

One reason why group activities produced the most positive results and a reason why tasks completed in whole-class arrangements were perceived as the least stimulating, may be the influence of peer support, collaboration and active involvement. Learning situations which grant students opportunities to interact with each other, which enable them to share responsibility and learn from each other, and which encourage the active involvement of all participants are believed to enhance learner motivation (Dörnyei, 2002; MacIntyre, 2002; Nunan, 1989; Richards & Rodgers, 1986; Robinson, 2002; Tudor, 2001). The interactive and supportive nature of group work tasks might have caused students to perceive these tasks as stimulating. Whole-class tasks, on the other hand, may have resulted in relatively negative responses because they did not enhance the active participation of all learners, which might also have caused some students to feel bored and detached from the task. These factors can further account for the strong impact of interactional pattern on students' perceptions of task appeal.

The literature also provides evidence for the contribution of dynamic classroom interaction on motivational processing and co-construction of task motivation (Dörnyei, 2002). This process-oriented approach recognizes the importance of peer influence on learners' motivational disposition towards the task when the activity provides opportunities for cooperative work. If one of the task participants is highly motivated in a group activity, it is likely that this person will affect the motivation of other participants. This study showed that group work tasks resulted in the most positive affective responses. Because group work supposedly enabled students with different levels of motivations to interact, it might have caused relatively unmotivated learners to become more motivated owing to the co-constructed nature of task motivation.

Tasks including group work and individual study may also have resulted in significant differences in affective response when compared to whole-class activities because they gave students a sense of control and enhanced their concentration. When learners are provided with a sense of responsibility and when they perceive themselves as the controllers of their behaviors (Deci & Ryan, 1985; Ryan & Deci, 2000a), they become more self-determined, thus more autonomous. Combined with the choice factor, individual and group tasks might have enhanced students' inherent need for autonomy by giving them more control over the tasks. The results also show that individual and group activities enhanced learners' focused attention to greater degrees. Even in a classroom environment where many distractions exist, learners seem to be more focused when they have clearly defined roles (Dörnyei, 2001b), such as in group and individual tasks. Regardless of the choice type, students' attention is absorbed in such tasks

whereas they may be unsure of the roles they are expected to undertake in whole-class activities. This might, in turn, cause interruptions in their concentration.

Finally, the results of *t*-tests for English proficiency and gender revealed non-significant differences in students' overall affective responses to tasks. While the reason for the non-significance of the difference in English proficiency can be due to the narrow range of proficiency exam results across participants, the unbalanced number of males and females in the sample can account for the non-significant differences owing to gender.

In this study, participants' ability in English was indexed by their scores on the proficiency exam. The responses on the background information survey revealed a homogeneous sample, with students' exam results ranging between 60 and 79. Although only the top and bottom third scorers were compared in the analysis, the narrow dispersion of proficiency exam scores might have led to non-significant results. Demographically, the participant group consisted of 21 males and only 5 females. While females displayed slightly more positive affective responses, the difference in responses between males and females was not significant. This may possibly be due to the unbalanced number of males and females in the selected group.

Pedagogical Implications

The results of this study are consistent with the claims of self-determination theory regarding the impact of choice on affective engagement (Deci & Ryan, 1985). They support the idea that providing choice in tasks can promote an increased sense of learner autonomy and develop greater intrinsic motivation. The findings also support the propositions of flow theory (Csikszentmihalyi, 1997; Egbert, 2003) concerning the

impact of choice on learners' perception of task appeal and task control. When tasks include choice, they are perceived as interesting and enjoyable, and they provide students with a sense of control. Ultimately, choice enhances learners' autonomy and their affective engagement.

The study shows that it is worth providing choices to students and encouraging dynamic interaction in language classrooms in order to promote students' affective engagement. The findings suggest that teachers should design and implement tasks that include choice where possible in order to provide autonomy support to students. This, in turn, may direct students towards more intrinsically motivated learning. The results have further implications for including interactive group activities in educational contexts in order to promote affective engagement. Group activities may involve students more in the learning process and give them a sense of responsibility and ownership, which can possibly support the internalization of behaviors.

Choice provision may lead to positive results on the condition that the options are perceived as meaningful and relevant by the learners (Assor et al., 2002; Dörnyei, 1994; Flowerday & Schraw, 2000; Pintrich, 1989; Schiefele, 1991). Therefore, teachers should be careful in offering choice to students by taking into consideration their needs, goals and interests. Contextualized learning experiences that afford choice may additionally contribute to affective engagement. Students may also need guidance and support in generating choices. If they are not accustomed to being involved in such decision-making processes, they may need help from their teachers. Students can also benefit more from choice provision when they are given the opportunity to evaluate the importance and relevance of goals, reflect on their learning, and monitor their own

progress (Benson, 2001). These processes can eventually assist the internalization of the choices by the students.

This study may also have implications for course design in educational institutions. The findings from the study can assist syllabus designers and materials developers in setting criteria for choosing and evaluating language learning tasks. Teacher training programs may also benefit from the findings of this study and emphasize the importance of choice provision in enhancing learner motivation and autonomy. Adopting a learner-centered approach and developing autonomy-supportive learning environments (Benson, 2001) can further be accepted as an educational policy at both local and national levels. Since the implementations in this study were not limited to any skill or proficiency level, choice provision can be adapted to any course. Learners can be included more in decision-making processes, even in issues concerning assessment. Thus, students' motivation and interest in the subject matter can be enhanced and they could exhibit more positive attitudes towards language courses.

Limitations of the Study

This study had certain limitations in examining the impact of choice on student affective engagement. The limitations of this study resulted from the absence of a control group, the inability of the researcher to observe the implementation of the treatment and the absence of qualitative data, the design of the perception questionnaire, the nature of tasks in the course syllabus, and the unexplored relationship between choice provision and performance.

The study was conducted with 26 students in a single section of an academic writing course. Rather than comparing student affective responses across different

groups, this study explored the differences in responses to tasks that varied in their provision of choice within the same group. The results showed that the participants were engaged in more positive emotional states when the tasks offered choice in comparison to no choice activities. The findings also showed that group work contributed the most to student affective engagement. However, since there was no control group, whether the same task when implemented in a different group by varying its choice type and interactional pattern would produce similar results is unknown.

Due to time constraints, the researcher was neither able to collect observational data nor conduct post-task interviews with the students. Although the participant teacher was given a list of guidelines on how to implement choice and was asked to describe the task process in detail in the weekly task chart, it is not possible to determine the emphasis placed on choice during the implementation. Students' involvement in and concentration on the task, whether process disruptions occurred, and if there were unpredictable obstacles or supports for flow other than the controlled variable of choice were also not observed. Additionally, collecting qualitative data from one-on-one interviews with the students at the end of a task could have given more insight into the impact of choice on their affective engagement. The interviews could also have been illuminating of students' experiences with the task which were not addressed by the questionnaire and might have compensated for the possible subjectivity of responses to the items. Collecting qualitative data could also have provided explanations for the number of students in flow and apathy in anomalous cases.

Another limitation of the study is related to the design of the perception questionnaire. Egbert (2003), from whose study the instrument was directly borrowed,

reported that the questionnaire reflected the four dimensions of flow - challenge, attention, interest, and control - for the tasks she had manipulated in her study. She also acknowledged the multicolinearity of the tasks in her study on the four dimensions and that using tasks with greater differences among these dimensions would yield better information. A post-study exploratory factor analysis for this study produced only three identifiable components as being measured by the questionnaire. While the dimensions of interest, attention and control were identifiable according to this analysis, the dimension of task challenge was not addressed by the questionnaire. Therefore, whether the tasks in this study were perceived as optimally challenging by the students is unknown. Thus, the impact of task challenge on students' affective engagement could not be investigated. The tasks used in this study varied from each other considerably in terms of control because they either provided students with choice or they did not. The level of attractiveness and challenge also differed across tasks. Only opportunities for focused attention may not have been provided to varying degrees in different tasks. Moreover, the tasks in this study were not as multicolinear on the flow dimensions as the ones in Egbert's study. For example, tasks that were high on the dimension of interest were not necessarily as high on the dimension of attention.

The nature of the tasks in the course syllabus was another limitation of the study. Although the course was an academic writing course, there were not enough writing tasks in the course schedule. Rather, the tasks had a focus on the sub-skills of writing, such as reading and the conventions for citing sources. Due to the tight and loaded course schedule, however, the researcher could not ask the teacher to include extra writing activities during the treatment period. Thus, the results of this study cannot be

generalized for writing tasks. Besides the inadequacy of writing tasks, the possibility that some tasks, by their nature, were appealing for students might have resulted in positive responses irrespective of the choice variable. Also, because the tasks in this study were selected from the course book or from the teacher's self-designed materials, the researcher and the instructor had difficulty in implementing choice in some tasks.

Further Research

Drawing on the findings and limitations of the study, suggestions for future research can be made. Interesting areas of research might include investigations into the impact of choice on language learning outcomes, the relationship between choice and students' autonomy orientation, other task characteristics that could enhance affective engagement with support from qualitative data, and the co-construction of task motivation in relation to interactional patterns.

First of all, since the results of this study show that provision of choice produced a significant positive difference in affective engagement compared to no choice, giving students choice in educational contexts is worth further exploration. Flow theory recognizes the contribution of flow experiences to optimal performance and learning (Csikszentmihalyi, 1997; Egbert, 2003; Larson, 1988). Self-determination theory also proposes that intrinsic motivation, which can be promoted by providing choice in activities, can improve the quality of learning (Deci & Ryan, 1985; Pintrich, 1989; Ryan & Deci, 2000a; van Lier, 1996). This study did not address the impact of choice on learners' performance on the task. Therefore, in future research, a similar study can be replicated with the focus on the relationship between choice provision and language learning outcomes.

An important issue to investigate in future studies could be the relationship between choice and learners' autonomy orientations. When individuals are autonomy-oriented, their perceived locus of causality is internal, which may, in turn, initiate intrinsically motivated behavior and integrated regulation. This study did not explore the autonomy orientation of learners. Therefore, how meaningful the choices were perceived to be by students relative to their autonomy orientation, and whether the learning environment was autonomy-supportive are unknown. Future studies can analyze learners' autonomy orientation and provide more conclusive findings regarding the impact of choice on language outcomes.

Future research can also be directed toward the investigation of other task characteristics that support conditions of flow, such as challenge, goals, attention, feedback, or teacher and learner roles. Each of these task characteristics can affect learners' engagement in and performance on tasks in different ways. These studies can ultimately lead to a better understanding of the motivational influence of specific classroom variables and the mediating effects of these variables on language learning and performance. Future investigations on these issues can also provide more insight when they are supported with qualitative data. Interviews and self-reflections can provide valuable information about the implications of such task features on student affective engagement.

Because the findings additionally support the use of group work in classrooms as a motivational tool, the dynamic co-construction of task motivation (Dörnyei, 2002) can be an interesting research area. The extent to which peers influence each other's motivation in group tasks and how the dynamic interplay of the task participants'

motivation affects learner engagement and performance can provide valuable contributions to the literature. Moreover, studies in this direction can analyze what the ideal number for group size could be in order to enhance task motivation and which contextual or social factors influence learners' actions and motivation.

Conclusion

This study investigated the impact of different choice provision procedures on students' affective responses during task engagement. The tasks used in this study were assigned to the three categories of teacher-assigned choice, student-generated choice and no choice. The results showed that there was a significant difference in student affective engagement in tasks offering choice when compared to no choice activities. However, there was no distinction between the two choice types. These results imply that choice provision contributes to increased interest and a greater sense of control over the activity, which are essential for enhancing autonomous learning and greater motivation. This study also shows that group work activities result in more positive affective engagement. Moreover, tasks completed individually and in groups encourage more dynamic interaction and active participation in the classroom, and therefore, contribute to increased interest in learning and more intense concentration.

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APPENDICES

Appendix A

A Survey of Participant Background Information

Please provide the necessary information below. Put a tick in the relevant boxes.

1. Name	
2. Section	
3. Department	
4. Sex	☐ Male ☐ Female
5. Did you attend the preparatory program at METU?	☐ Yes ☐ No
6. What was your proficiency exam score?	
7. Have you taken the English 102 course before?	☐ Yes ☐ No
8. If yes, a) how many times? b) what was your course grade? (e.g. CB)	a) b)

9. Please read the statement below and circle the number that most closely corresponds to your opinion.

	Strongly Disagree	Disagree	Agree	Strongly Agree
I think the English 102 course will help me write better in English.	1	2	3	4

Appendix B

Informed Consent Form

Dear Students,

My name is Selin Alperer and I am a graduate student at the MA TEFL Program at Bilkent University. I am conducting a study to investigate the ways in which students respond to different tasks in English courses. If you agree to participate in this study, short questionnaires will be administered to the class over a six-week period. The questionnaires are designed for the purpose of collecting information about your affective responses to classroom tasks.

Your responses to the items in the questionnaires will not have any positive or negative effect on your course grade. Your name is required on the questionnaires in order to keep track of individual students. However, all data collected through your responses will remain anonymous. Your identity will not be revealed in any report derived from this data. You may decide to leave the study any time. Please inform your teacher if you want to leave the study.

In order to be able to collect reliable data, it is important that all the items are answered in the questionnaires. Please read the items in the questionnaire carefully and be honest in your responses. Your responses will greatly contribute to my study. If you have any questions about the study and the results, you can contact me at 210 31 81 or salperer@metu.edu.tr. Thank you for your participation.

Selin Alperer
MA TEFL Program
Bilkent University
Ankara

I have read and understood the above and agree to participate in this study.

Name:

Signature:

Appendix C

Perception Questionnaire

Name _____ Task #____ Week #____ Date

For the task you have just completed, circle the number that corresponds to your degree of agreement with the statements below. Please circle only one number for each item and do not leave any items unmarked.

Strongly Disagree						Strongly Agree
1	2	3	4	5	6	7

1. This task excited my curiosity.	1	2	3	4	5	6	7
2. This task was interesting in itself.	1	2	3	4	5	6	7
3. I felt that I had no control over what was happening during this task.	1	2	3	4	5	6	7
4. When doing this task I was aware of distractions.	1	2	3	4	5	6	7
5. This task made me curious.	1	2	3	4	5	6	7
6. This task was fun for me.	1	2	3	4	5	6	7
7. I would do this task again.	1	2	3	4	5	6	7
8. This task allowed me to control what I was doing.	1	2	3	4	5	6	7
9. When doing this task, I was totally absorbed in what I was doing.	1	2	3	4	5	6	7
10. This task bored me.	1	2	3	4	5	6	7
11. During this task, I could make decisions about what to study, how to study it, and/or with whom to study.	1	2	3	4	5	6	7
12. When doing this task, I thought about other things.	1	2	3	4	5	6	7
13. This task aroused my imagination.	1	2	3	4	5	6	7
14. I would do this task even if it were not required.	1	2	3	4	5	6	7

Appendix D

Translated Version of the Perception Questionnaire

İsim _____ Aktivite #____ Hafta #____ Tarih

Yaptığınız aktiviteyle ilgili olarak aşağıdaki ifadelere hangi derecede katıldığınızı göstermek için bir numarayı yuvarlak içine alınız. Lütfen tüm ifadeleri cevaplandırınız ve her ifade için yalnızca bir numara işaretleyiniz.

Kesinlikle Katılmıyorum						Kesinlikle Katılıyorum
1	2	3	4	5	6	7

1. Bu aktivite bende merak/ilgi uyandırdı.	1	2	3	4	5	6	7
2. Aktivitenin kendisi ilgi çekiciydi.	1	2	3	4	5	6	7
3. Bu aktiviteyi yaparken olanlar üzerinde bir kontrolüm olmadığını hissettim.	1	2	3	4	5	6	7
4. Bu aktivite ile uğraşırken, etrafımda gelişen aktivite dışındaki olayların farkındaydım.	1	2	3	4	5	6	7
5. Bu aktivite beni meraklandırdı.	1	2	3	4	5	6	7
6. Bu aktivite benim için eğlenceliydi.	1	2	3	4	5	6	7
7. Bu aktiviteyi bir daha yapardım.	1	2	3	4	5	6	7
8. Bu aktivite yaptığım şeyin kendi kontrolümde olmasına izin verdi.	1	2	3	4	5	6	7
9. Bu aktivite ile uğraşırken dikkatim tamamen yaptığım işe yoğunlaşmıştı.	1	2	3	4	5	6	7
10. Bu aktivite sıkıcıydı.	1	2	3	4	5	6	7
11. Bu aktiviteyi yaparken hangi konu üzerine çalışacağım, nasıl çalışacağım ve/veya kiminle birlikte çalışacağım gibi kararlar verebiliyordum.	1	2	3	4	5	6	7
12. Bu aktivite ile uğraşırken başka şeyler düşündüm.	1	2	3	4	5	6	7
13. Bu aktivite hayal gücümü geliştirdi.	1	2	3	4	5	6	7
14. Zorunlu olmasa da bu aktiviteyi yapardım.	1	2	3	4	5	6	7

Appendix E

Weekly Task Chart

WEEK # ___							
Task Number	Date	Task focus	Task process	Choice type	Interactional pattern	Number of sts who did the task	Number of sts who filled in the questionnaire
Task # 1							
Task # 2							
Task # 3							
Task # __							
Task # __							
Task # __							
Task # __							

Appendix F

List of Tasks

Task No.	Task Focus	Task Process	Int. Pattern	Choice Type
1	Narrowing down topics	Sts generated topics related to theme 1in groups; the topics are displayed on the BB; sts chose one of the topics on the BB and step-by-step narrowed it down to a thesis statement.	G	SGC
2	Evaluating effectiveness of thesis statements	Sts were given envelopes with sample thesis statements; a list of the features of effective thesis statement were also included in the envelopes; sts matched the features with sample thesis statements by identifying effective and ineffective ones.	G	NC
3	Outlining	The teacher provided students with different outline examples that were incomplete; sts chose one of the outlines; 2 of them were changed on the BB through a detailed analysis of major and minor supports.	W-C	TAC
4	Techniques for writing introduction paragraphs	Sts were given a worksheet on which there were sample introduction paragraphs written using different techniques; together they matched the techniques with the sample paragraphs.	W-C	NC
5	Reading and discussion	Sts read a part of the text related to justice and filled in a chart in their books (individually); this was followed by a whole-class discussion on whether the information about justice in the text was applicable to Turkey.	W-C	NC
6	Guessing vocabulary	Sts tried to find the meanings of vocabulary in a text by making use of contextual clues and by analyzing their part of speech.	I	NC
7	Answering questions using quotations	Sts were distributed a reading passage followed by some comprehension questions; they answered the questions by directly borrowing information from the text using quotation marks and in-text references appropriately.	I	NC
8	Paraphrasing	Sts formed groups and the teacher distributed each group a pack including short paragraphs on different topics; each group chose one paragraph and re-wrote it using their own words.	G	TAC
9	Worksheet on citing	Sts were given a fill-in-the-blanks type worksheet including statements about quoting, paraphrasing and summarizing to review what they have learned about synthesizing and citing; they went over the worksheet as a whole class sts taking turns in filling each blank.	W-C	NC
10	Analyzing APA references of a sample article	Sts were distributed a sample journal article including in-text and end-text references; together they analyzed the format of the references and tried to generate rules.	W-C	NC
11	APA conventions	Sts were given strips on which APA conventions were printed and a worksheet with APA citation examples in texts; sts matched the strips with the examples.	G	NC

12	APA end-text references	Sts were provided with a variety of sources (e.g. books, magazines, journals, newspapers, etc.); each group was asked to choose two sources and write its end-text reference	G	TAC
13	Editing essays	Sts were given a sample of a bad student essay (problematic in terms of organization, coherence, citations, etc.); they were asked to edit the paper and give feedback.	I	NC
14	Writing a documented essay	Sts had previously chosen their topics, done research on their topics and collected sources to support their ideas; in class they wrote the first draft of their essay using information from their sources, too; later they will edit and revise their essays (sts are graded on this essay).	I	SGC
15	Brainstorming keywords & formulating research questions	In relation to the second theme in the book, 'Survival in Nature', sts formed groups and brainstormed keywords related to the topic; the teacher displayed the topics on the BB; each group chose one of the topics on the BB and wrote 2 research questions for that topic (they were encouraged to write questions about what they would really like to learn about this topic or what they were curious about).	G	SGC
16	Vocabulary practice worksheet	Sts were given a vocabulary practice worksheet including words related to the second theme in a box at the top (e.g. deforestation, extinction, etc.) followed by 3 short paragraphs with blanks; sts were asked to select the appropriate words in the box to fill in the blanks in the paragraphs.	I	NC
17	Predicting messages from pictures & presenting to class (accompanied with reading text)	The teacher brought pictures of interesting places around the world and had each group select a picture (the pictures showed the places described in the reading passage 'Earth's Album' and the messages the author gave related to each place); sts were asked to use their imagination to guess where the places shown in the pictures were and write messages for the pictures; a student from each group came to the front of the class, showed their picture and read out their message; all pictured were posted on the BB; then they referred to the text to check if their predictions were correct.	G	TAC
18	Writing research questions to pictures from a web-site & presenting to class	Sts were given the address of the web-site from which the pictures (in task 17) were taken and were asked to go to the lab and select a picture that was not discussed in the reading passage (Earth's Album); then they were asked to write a research question for the pictures they had selected; each student presented their pictures and research questions to the whole class.	I	TAC
19	Generating topics & research questions using magazines	All the possible topics and research questions from students' presentation in task 18 were compiled into a list on the BB by the teacher; sts in groups were then distributed different issues of the magazine 'National Geographic'; in groups they generated research questions for topics they found interesting in the magazine; these were added to the previous list on the BB; sts chose one of the topics or questions on the BB and did Internet research on the topic (Later they used the sources they found on the Internet in a writing task).	G	SGC

Note. G = group work; I = individual work; W-C = whole-class; TAC = teacher-assigned choice; SGC = student-generated choice; NC = no choice

Appendix G

Instructor's Guidelines

Following are some guidelines to help you with the administration of the perceptions questionnaire and a few suggestions for keeping track of data.

Administration of the Perceptions Questionnaire

1. Please administer the perceptions questionnaire after each task. This may mean that you may need to give the questionnaire more than once or even twice on the same day.
2. Please distribute the questionnaire to the whole class right after the task is completed. (For healthy and reliable data, it is important that time does not pass between the completion of the task and the completion of the questionnaire.)
3. The suggested choice provision procedures for the tasks are as follows:

    - Teacher-assigned choice – The teacher gives students a list of topics or activities/ exercises to choose from.
    - Student-generated choice – The teacher provides a broad thematic framework. Students form groups to generate and brainstorm on related topics of interest and form their own lists. Each group selects their top two topics. The highest-ranking topics from each group are compiled (either into a list to be distributed to the class or displayed on the board). Students choose topics from this compiled list.
    - No choice - Students work on a topic or task that is determined by the teacher or that is included in the course book.

4. Please make sure that students write their names, the task number, week, and date as indicated, every time they fill in the questionnaire. (This information is very important for entering my data.) It would be safer if you could specifically tell students the week and task number just before they fill in the questionnaire, as you will be keeping track of those in your weekly charts.
5. Please do not allocate more than 2-3 minutes for the completion of the questionnaire. Considering the fact that you may need to administer it more than once in the same class hour, have students complete it as quickly as they can so that the flow of the lesson is not interrupted.
6. After students fill in the questionnaire, please collect all questionnaires and put them in the relevant section in your file. In your weekly chart, please note both the number of students who did the task and the number of students who completed the questionnaire (as there might be a difference between the two variables).

Keeping Track of Data

1. Please note that the weeks in your chart do not correspond with the weeks in the academic calendar. Rather, the weeks are organized according to the schedule I will be using for my study, which is expected to last for 6 weeks.
2. Please take the weekly chart with you to every class. It is kindly recommended that you fill in the chart while students are completing the questionnaire (especially the two columns about the number of students), but you may choose to fill in some sections (e.g. task process) when the class period is over.
3. In your weekly chart, please indicate the task number. You can label the first task as "1" and continue in ascending order until the last task completed after 6 weeks. (Please do not start with "1" again when you start a new week as this may lead to confusion). Also note the date when the task was done in your weekly chart.
4. There are two columns in your weekly chart labeled as 'task focus' and 'task process'. Task focus refers to the type of activity that students have engaged in. Task process requires a more detailed description of the activity (see example below).
5. 'Choice type' refers to the three choice provision procedures for the tasks; i.e. teacher-assigned choice, student-generated choice, and no choice. For each task, please indicate the choice type in your weekly chart.
6. Please also indicate whether students completed the task individually, in pairs, in groups or as a whole class in the next column labeled 'interactional pattern'.
7. Please note the number of students who did the task and the number of students who filled in the questionnaire immediately after you collect the questionnaires.

Example:

WEEK #1							
Task No.	Date	Task Focus	Task Process	Choice Type	Inter-actional Pattern	N	N q.naire
#4	3.3.05	Reading a passage and discussing follow-up questions	Sts read a text on "social justice" and brainstormed the Q's; then, whole-class discussion	No choice	Pair-work & whole-class	26	26
#5	3.3.05	Writing a response paragraph	Sts chose one of the extracts in Unit 1 and wrote a response paragraph referring to the guidelines on pg. 12	Teacher-assigned choice (for the extracts)	Individual	24	23

Appendix H

Post-Study Factor Analysis Results

Total Variance Explained

C	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of V	Cum. %	Total	% of V	Cum. %	Total	% of V	Cum. %
1	7.503	53.594	53.594	7.503	53.594	53.594	5.453	38.953	38.953
2	1.366	9.759	63.354	1.366	9.759	63.354	2.366	16.904	55.856
3	1.126	8.045	71.398	1.126	8.045	71.398	2.176	15.542	71.398
4	.720	5.145	76.543						
5	.646	4.618	81.161						
6	.549	3.921	85.081						
7	.479	3.419	88.501						
8	.387	2.765	91.265						
9	.305	2.181	93.446						
10	.274	1.958	95.405						
11	.244	1.740	97.144						
12	.185	1.318	98.463						
13	.140	1.003	99.466						
14	.075	.534	100.000						

Note. C = component; V = variance; Cum. = cumulative
Extraction Method: Principal Component Analysis. 3 components extracted.

Rotated Component Matrix (a)

	Component		
	1	2	3
I1	**.869**	.237	.143
I2	**.872**	.222	.127
I3	.056	.447	**.665**
I4	.177	**.887**	.069
I5	**.869**	.199	.133
I6	**.823**	.212	.286
I7	**.812**	.250	.227
I8	.377	.237	**.681**
I9	.477	**.517**	.430
I10	**.582**	.345	.337
I11	.181	-.079	**.819**
I12	.398	**.777**	.145
I13	**.585**	-.001	.282
I14	**.754**	.273	.094

Extraction Method: Principal Component Analysis.
Rotation Method: Varimax with Kaiser Normalization.
a. Rotation converged in 5 iterations.